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Consumers' Research Bulletin



August 1952

1952 AUTOMOBILES



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Consumers' Research Bulletin

OFF THE EDITOR'S CHEST

IN presenting the results of its tests on articles used by consumers, CR has the problem of translating the data and professional judgments of engineers and scientists into a form which the layman can understand and utilize readily. Yet there remains the necessity of including enough information about the test methods and findings to be of interest to engineers, chemists, medical men, and other scientifically-trained people — who constitute a sizable percentage of our subscribers.

People interested in engineering, accounting, statistics, and finance have a fondness for seeing data presented in the form of tables or graphs. On the other hand, the average consumer may find such a presentation depressing and uninforming, and he may feel too that some of the information about complex appliances or chemical specialties is too technical to be useful to persons who do not have a scientific or engineering or other applied-science education.

Steering a middle course that will satisfy both points of view is sometimes difficult. We do find it desirable to include a good deal of the kind of information that engineers and scientists appreciate because the quality and soundness of our work must ultimately be judged by technical experts, and their opinion of what CR is doing is important in influencing others who are not themselves in a position to decide whether a given test method was suitable for tests of a particular article, or whether the findings accord with general technical knowledge or experience. Moreover, it has been a major function of CR from the first to *develop the science and techniques of testing commodities* used by ultimate consumers; test methods for consumers' goods are at an elementary stage of development aside from the work done by CR, and a very few other agencies (chiefly concerned with purchases for industry or for government).

The studies reported in CR BULLETIN are not only important in helping average consumers buy effectively and economically by choosing recommended makes and brands and avoiding products that have recognizable hazards and defects, or show inefficient performance. They also call to the attention of manufacturers the more important defects and deficiencies in their appliances and other items so that needed improvements may be made. Manufacturers have found our suggestions of test methods very important in developing and improving their own, and in making their products better, and in that way effectively serving all. We, there-

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Consumers' Research functions to provide unbiased information on goods bought by ultimate consumers. For their benefit (not for business or industry) and solely with the funds they provide, CR carries on tests and research on a wide variety of goods, materials, and appliances, and publishes the findings in CR Bulletin. Consumers' Research is a non-profit institution, and is organized and operates as a scientific, technical, and educational organization.

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Symbols used to indicate sources of data and bases of ratings: A—recommended on basis of quality; AA—regarded as worthy of highest recommendation; B—intermediate with respect to quality; C—not recommended on basis of quality; D—poor quality. Symbols used to indicate extent of test or investigation: 1, 2, 3—relative prices, 1 being low, 3 high. Note that price and quality are completely differentiated in CR's listings; a **judgment is independent of price**; 51, 52—year in which test was made or information obtained or organized by the staff of Consumers' Research.

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*CR will, of course, gladly change addresses for men and women in the services as often as required by changes in station and other circumstances.

★ ★ ★ For a brief cumulative index of the 1952 BULLETINS prior to 1952, see page 36.

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The Consumers' Observation Post

DRINKING TOO MUCH MILK may be a cause of malnutrition in children. According to a newspaper account of the recent American Medical Association convention, Dr. Harold D. Lynch and Dr. William D. Snively, Jr., of Evansville, Ind., reported that youngsters could be starved by forcing them to drink so much milk that they had no room for other necessary foods. The good doctors indicated that they believed vegetables in large quantities were not essential and that fruits were just as nutritious. They recommended protein in the good solid form of meat as "the No. 1 builder-upper." Since the U.S. Department of Agriculture, whose services include much propaganda for dairy interests, has been touting milk for years as the nearly perfect food, especially for children, it will, no doubt, bring to the attention of Doctors Lynch and Snively the more "orthodox" view of the subject.

* * *

PALM BEACH SUITS for men were selling in certain Sears-Roebuck retail stores for \$18.80, reported Men's Wear in May. The label identification was not in the suits, but the magazine noted that a Palm Beach representative admitted that a large number of what was described as "old stock of last year" had been sold to the mail-order company. No doubt such bargain suits have been snapped up by this time, for the Sears' price represented quite a saving over the "fair trade" price of \$29.95 customarily charged. One clue dropped was that the suits had not been sold "in major cities," in case bargain hunters should want to pursue the matter further.

* * *

AN ATOMIC RADIATION PROCESS for preserving food has been developed at the University of Michigan. According to the May issue of a grocery trade journal, beefsteak exposed to gamma rays of cobalt showed no surface changes and had no unpleasant odor after three weeks of storage at room temperature. But hardly a month and a half later, a warning of the possible dangers from sterilizing foods with X-radiation was issued by Dr. James F. Mead, chief of the biochemistry division of the Atomic Energy Project in the University of California at Los Angeles School of Medicine. Recent research by Dr. Mead and his associates has indicated that X-radiation had a damaging effect on the fatty acids found in many food substances. It appears that as a result of this action, vitamins in the food that has been irradiated will be destroyed and substances will be released that are injurious to vitamins and to essential fatty acids in the body when the food is eaten.

* * *

SOME GOOD ELEMENTARY ADVICE on television servicing and repairs is given by the Association of Better Business Bureaus in a little leaflet, Things You Should Know About the Purchase and Servicing of Television Sets. The types of interference, kinds of antennae, and essential points to look for in a service contract are listed, as well as a number of factors that service contracts do not cover. The pamphlet strongly advises against a set owner's trying to make repairs on a television set himself, even if he has read some one of the various "how to do it" books on the subject. The leaflet is available from local Better Business Bureaus, some television dealers, and the Association of Better Business Bureaus, 405 Lexington Ave., New York 17.

* * *

FOR THOSE TROUBLED WITH "ATHLETE'S FOOT" (*tinea pedis*), the Journal of the American Medical Association has favored one of the fungistatic dusting powders such as Desenex or Asterol. The powders are non-irritating

and may be dusted liberally on the feet and into socks and shoes. The Journal warns, however, that though these preparations will inhibit the growth of the irritating fungi, they will not kill the organisms.

* * *

FROZEN FOODS have picked up in popularity since the new B-grade, lower-priced brands appeared on the market. One home economist, however, advises against freezing leftover cooked vegetables to use at a later meal. Vegetables that are completely cooked before freezing do not have as good a flavor nor as high a vitamin content after reheating to serve again.

* * *

THE "TAFFETIZED" LACQUER TYPE FINISH that was once applied only to taffetas is now to be found on many fabrics. Taffetized fabrics are much stiffer and crisper than untreated fabrics, reports the National Institute of Cleaning and Dyeing. In dry cleaning, the mechanical action of the process affected the finish slowly so that considerable stiffness was lost after several dry cleanings regardless of the type of cleaning solvent used. The NICD found that wet cleaning usually caused less alteration of the taffetized finish than dry cleaning.

* * *

THE SILEX COMPANY'S ADVERTISING has come under fire by the National Coffee Association for its claim that the Silex coffee brewer gives a yield of 64 cups of coffee to the pound whereas only 40 cups per pound may be obtained from other coffee makers. There is no agreement on what constitutes a good cup of coffee, but the National Coffee Association holds that the Silex recipe will produce a brew that is weak and unsatisfactory to the average consumer. Furthermore the fineness of the grind has a direct bearing on both the quality and the economy of the finished product, for the finer the grind, the greater the economy. The manager of a well-known Brooklyn, N.Y., restaurant, long noted for the quality of its food, gives his recipe for coffee which calls for no more than three 6-oz. cups from 1 oz. of medium or drip coffee. That would give a yield of 48 cups to the pound. It is much easier to dilute a too-strong cup than to pep up a weak one.

* * *

HOME FOOD FREEZERS are considered a great convenience, particularly in the summertime, but they can be an expense and a liability if there is power failure or line breakdown for any length of time. It has been estimated that there is great danger of food spoilage or deterioration if the freezer has been out of operation for more than 15 to 18 hours. Some freezer concerns are now offering insurance policies for loss of food in such an event. The terms vary. Sometimes a policy covers loss of food when the freezer itself breaks down; other policies cover freezer breakdown and non-operation due to power failure. Crosley, for example, offers insurance against loss by spoilage resulting from mechanical breakdown or outside power failure on a three-year basis in the amount of \$100 at a \$5 premium, ranging up to \$500 at \$12. Other makes for which some type of insurance is offered by the distributor or manufacturer include: Amana, Coolerator, and Frigidaire.

* * *

VARIOUS HOUSEHOLD ARTICLES and office equipment made of fabricated metal have hidden dangers, writes a hospital physician. He reports the case of a woman who sustained a deep cut in her finger while wiping off the bottom edge of a stainless-steel food cart on which the sheet metal had been shaped by stamping or shearing and left with razor-sharp edges due to the omission of the process of "burr" removal. Another case was that of sharp edges on some spring-operated paper clips which the physician had purchased. In the interest of safety, every householder might well take inventory of kitchen and other household utensils and equipment to locate possible trouble spots of this type.

(The continuation of this section is on page 35)

Automobiles of 1952

Consumers' Research's comparative report on 45 cars

THE present year has not been distinguished for significant changes in automobiles; in fact, in most makes a bit of "face lifting" to make the models look new and different is the most evident change. Entirely new engines are the *Ford* 6, *DeSoto* V-8, and *Lincoln*. The *Willys*' engine may also be considered new, in having a new design of cylinder head, although its other major specifications remain similar to those of 1951. The *Lincoln* is entirely new from engine to chassis and body; its entire front end is designed to be serviced from beneath the car; oil filter, fuel pump, generator, etc., are located near the bottom of the engine compartment. This may be very good from the service station's standpoint, but it will make more difficult many sorts of emergency service on the road.

Probably the most noteworthy trend this year is the adoption of power steering (discussed more fully later) on additional makes and models as optional or standard equipment. *Cadillac*, *Buick*, and *Oldsmobile* now offer power steering, and the *Chrysler* Corp. has introduced it on *DeSoto* and continued it on certain *Chrysler* models. It is not available for the *Lincoln*, but on that car, *Thompson* universal ball joints are used in the front-wheel suspension system to make steering much easier. Reports received by CR indicate that the change may have made the steering system too "easy" on the *Lincoln*, in permitting continual undesirable reaction movements at the steering wheel from minor road irregularities, wheel unbalance, etc.

On several cars this year the trunk handle has been omitted, and the latch is released simply by turning the key. This is very undesirable, for should the latch mechanism or the trunk lid itself be bent, which is quite possible (failure of the latch mechanism occurred on one of CR's test cars), or if rust and dirt make the mechanism hard to operate, it may be almost impossible to

open the trunk. The key, of course, is not strong enough to permit the application of sufficient force to turn the latch if it is out of order or strained.

The tendency to concentrate the larger proportion of the weight of the cars on the front wheels instead of on the rear, where it belongs, continues. This loss of weight on the rear wheels makes starting difficult, because of loss of traction, and greatly increases the tendency to skid on slippery or uneven surfaces. Many owners try to correct this in part, in the winter at least, by carrying a dead load of 100 to 200 pounds of sand or gravel in the trunk. Of course it costs money and wastes valuable space to haul the dead load around the countryside. One hopeful sign is that the designers of the new experimental cars, *Le Sabre* and the *XP-300*, have placed the transmission, generator, starter, and batteries in the rear in order to get a greater share of the weight back on the rear wheels, where it belongs.

The purchase price of a car today is more than double that of a car of the same make in 1940. A considerable part of this increase is due to the depreciation of the currency, but another very substantial element is due to great increases in taxes on everything that goes into a car and on the assembled car itself. Few consumers realize that in buying a \$2000 car today nearly one third, or \$614, of its purchase price goes for taxes.

Automatic Transmissions

The only important change this year is a new *Hydra-Matic* drive, available on *Pontiac*, *Nash*, *Oldsmobile*, *Cadillac*, *Hudson*, *Kaiser*, and *Lincoln*, which has an extra drive position on the control lever, and is used with a high rear-axle ratio. Moving the lever into the extra position (variously marked on different makes of cars) locks out the fourth gear; thus the driver has

available a 3-speed automatic transmission with a medium-high top gear for city and hill-country driving and a 4-speed automatic transmission with a high top gear for ordinary country driving. On the *Cadillac 62*, for example, the ratios are as follows: first or low gear, 3.82 to 1; second, 2.63 to 1; third, 1.45 to 1; fourth, direct. In the high range, gears can be shifted down from fourth to third by "kicking down" the accelerator to the floor at speeds up to 70 m.p.h. (or down from third to second at speeds up to 25 m.p.h.).

The advantages of the new *Hydra-Matic* drive are that in going up hill on mountain roads when the fourth gear is locked out, the frequent shifting between fourth and third gear, which occurred with the previous *Hydra-Matic*, is eliminated, and good engine braking in descending hills is available with the fourth or overdrive gear locked out, which can be done at any speed below about 50 m.p.h. by simply moving the gear selector to the second "drive" position.

There is no doubt that automatic transmissions are popular, but there were opinions both for and against them in the letters from CR subscribers who furnished us information on their recent-model cars. A writer to one of the trade journals, who drives a car equipped with *Hydra-Matic*, seems to have summed the situation up very well, as CR sees it. He wrote, "I believe many enthusiastic drivers will prefer to keep the manual shift. The automatic shift when used properly, is good and seems much appreciated by women, and by drivers who prefer their motoring made as effortless as possible." From the standpoint of efficiency (gasoline mileage), *Hydra-Matic* and *Ultramatic* are the best of the automatic transmissions and the *Dynaflow* and *Powerglide* the least favorable. Yet there are many who prefer the torque-converter (*Dynaflow* and *Powerglide*) type because of its smoothness, and except for its lower gasoline mileage find it very satisfactory (except in stop-and-go city traffic where its high slip at starting is unsatisfactory to some drivers).

The *Studebaker* and *Ford* transmissions are not so efficient in use of gasoline as the *Hydra-Matic* but are more efficient than the *Dynaflow*. In CR's opinion, many who buy a car with the automatic shift are not aware of its disadvantages of: increase in fuel consumption; creep, especially when the oil is cold; high engine speed when the car is being accelerated at starting; greater danger of accident; and with gear-type automatic transmissions, difficulty in climbing hills under snowy and icy conditions. And they do not allow for the great inconvenience and frequently high cost and uncertainty of obtaining the necessary highly skilled workmanship in

making a major repair in case something fails, as is bound to happen occasionally.

Instructions to the purchasers on the proper and safe use of automatic transmissions leave much to be desired.

Overdrive

This year for the first time overdrive is available on the *Plymouth* (\$102), leaving the *Chevrolet* the only car in the lower-priced field for which this equipment is not available. There are several arguments for and against overdrive. Advantages are: reduced engine speeds, which result in quieter operation, and some saving in gasoline and oil under most driving conditions; improved acceleration in third gear, as the rear-axle ratio is usually increased about 10 percent when overdrive is installed; at speeds below the overdrive cut-in point (around 25 m.p.h.), it is not necessary to use the clutch in changing gear from low to second, from second to high, and from high to second. (The gears in these ranges can be changed by merely releasing the pressure on the accelerator pedal. This practice, however, is not recommended as the owner may mistakenly attempt to change gears without declutching when the overdrive is locked out.) The overdrive is much simpler mechanically than an automatic transmission. Disadvantages of the overdrive are: freewheeling at speeds below about 25 m.p.h., which results in decreased safety, more use of the brakes (except when the overdrive is locked out as it should be in descending hills, in order to provide engine braking as is required by law in some states). Overdrive is best locked out when the car is stationary, but in going down a hill it can be locked out by pushing the accelerator all the way to the floor to get the car into third gear, then pulling out the lock-out control. This, however, has its obvious dangers, as the car is momentarily speeded up, when the need is to slow it down, and the operation may start a skid. The savings in gasoline consumption with an overdrive are not large, and on that account it may take several years to pay for the initial cost of the overdrive unit.

We do not believe that much weight should be given to claims for reduced engine wear with overdrive. Wear is not directly proportional to engine speed, for such factors as reduced engine temperatures, higher relative oil pressures at the slower speeds, reduced piston velocities, etc., make the problem quite complicated. It is, however, generally conceded that wear is not increased with overdrives, and there is reason to believe that it may be reduced somewhat.

The overdrive is considered a good investment

for the owner who expects to keep his car for several years. The short-time owner (one who turns his car in every one or two years) would not find the purchase of overdrive economically justified on the basis of reducing costs of operation (except perhaps for a car driven by a salesman in open-country driving or some other person who travels an unusually large number of miles per year).

Power Steering

Power steering is not new; the first hydraulic power-steering gear was installed on a *Pierce-Arrow* car in 1926, at which time it met a cool reception.

Power steering can be termed more accurately "power-assisted steering," since the devices now available act to assist the driver in his turning of the steering wheel. All elements of the conventional steering gear are retained; the design provides that full manual steering shall always be available should the power-actuated steering mechanism become inoperative. It should be noted, however, that on those cars equipped with power steering in which the steering ratio has been reduced considerably (as with *Chrysler* cars in 1951), it will be quite difficult to turn the steering wheel, particularly when parking, if the power system is not functioning.

Power steering offers several advantages to the driver: (1) Ease of steering is provided regardless of the nature of the road surface or slow speed of the car; (2) steering can be made more rapid and responsive than with the usual steering arrangement, since with a lower steering ratio, fewer turns of the steering wheel are needed to produce the same angle of turn of the front wheels; (3) driving safety should be improved because the steering wheel is not likely to be jerked from the driver's hands, even if a tire blows out, or if the car momentarily leaves the paved surface of the road. When either or both front wheels encounter an obstacle, or a force greater than normal is applied laterally to the front wheels, the power-steering system "reverses" its action and tends to resist that force with the same force as is applied by the system to relieve driver effort in turning the steering wheel.

The desirability of power steering, in fact the necessity for it in some cases, is the outgrowth of a series of changes which have occurred in car design over the past 10 to 15 years. The gradual shifting of weight from the rear wheels to the front wheels of the present-day car, coupled with the fact that tires have been made larger and larger in cross section, while tire

inflation pressures have been lowered by a substantial percentage, are major reasons for the need for power-assisted steering. To help with the problem of parking, steering ratios have been increased, until they now are at least twice those of earlier cars. Even so, it is extremely tiresome to park a large, in fact a medium-sized, car — especially for a woman or person not having good musculature in arms and shoulders, and driving over a winding road, too, can be quite tiring. More important is the fact that with the higher ratios the small movement of the front wheels, which corresponds to a relatively large angle of rotation of the steering wheel, has made difficult recovery from a skid, or turning quickly out of the way of an obstacle, or a person on the road. If there is a tire blowout, the driver of a car with a too low or a too high steering ratio may not be able to exert the extra force required or to turn the steering wheel quickly enough and far enough to prevent an accident. Thus riding comfort inherent in low-pressure tires has been gained at the cost of easy and safe control of steering.

All power-steering systems used today on passenger cars are of the hydraulic type, and while their principle of operation is simple, actual installations are more complex and differ in basic design and the way in which the assisting force is controlled. The steering ratio with power steering is 16.2 to 1 on *Chrysler* cars, considered a very measurable reduction compared with the present ratios for manual steering, which for heavy cars is around 26 or 28 to 1. With the lower ratio, the driver used to the conventional ratio may have a tendency to "oversteer" until he becomes accustomed to the new mechanism. For this reason, CR advises that anyone buying a car with power-assisted steering should, to avoid accident or injury, receive some driving instructions before taking delivery of the car. While steering effort is reduced considerably with the power assist, the element of "feel," so important to the driver for his own safety and ease of driving, has not been eliminated and one is still able to retain close control of the car, even though new habits will likely have to be formed.

For the present, the steering ratios on General Motors Corp. cars will be but slightly reduced from their previous values. Company engineers are well advised, we believe, to reduce steering ratios gradually instead of "in one big jump" as with *Chrysler*. The General Motors Corp. system affords no power assistance in the straight-ahead position normally, or for a few inches of turn each side of the steering wheel. Power pickup then develops slowly, as the steering wheel is turned, but power-assistance does not take place until the force exerted by the

driver reaches about 4 pounds at the steering-wheel rim.

Some *Chrysler* owners have complained that steering is too easy in the straight-ahead position and also somewhat too easy in side positions.

While the increased use of power steering on passenger cars will undoubtedly introduce some service difficulties, one expert holds that these should not be anywhere near as extensive as has occurred with other new devices when first introduced, for instance with automatic transmissions. *Chrysler* already has had a year's experience with its power-steering assembly, and it is said that relatively little difficulty has been experienced. Troubles reported to date have largely been due to dirt in the system, oil leakage, and sticking of hydraulic valves; these can usually be corrected by a thorough internal cleaning and tightening up of the assembly.

Tinted Glass

The use of tinted glass for windshields and other glazed areas in the new cars has increased considerably during the past year. The final deterrent to its acceptability was eliminated when the State of Massachusetts joined the rest of the states in permitting use of the new glass.

The principal claims made for the tinted glass, which has a high iron content, are that it will reduce the glare from oncoming headlights at night and cut down the amount of solar radiation passing through the glazed areas of a car, so as to give lower temperatures in a car on hot, sunny days.

The best opinion available and the preliminary results of tests so far completed by one of the states indicate that the tinted windshield is not a good expedient. If the nighttime light-transmitting qualities of the windshield glass are sufficiently reduced to decrease appreciably the glare from automobile headlights, the effect is to decrease the degree of visibility of objects and obstacles along the highway. It is a fact that any appreciable increase in light absorption of a windshield or of side- or rear-window glasses over that produced by clear glass can diminish to a significant degree the visibility of objects that are dimly visible at night, so as to bring them to the threshold or below the threshold of perception. This is the point that underlies CR's advice against wearing light-absorptive sunglasses while driving at night (though, to be sure, many sunglasses put the driver at a greater disadvantage than the new windshields, because they are optically more dense and absorb considerably more light than so-called non-glare windshields). While a gradual increase in opacity

near the top of a windshield is not detrimental to safe seeing, particularly for short persons, there is objection to any reduction of the light passing through the lower part through which the driver sees oncoming traffic at night, beyond the light loss which is unavoidable. (Glass, like other transparent materials, is not a perfect transmitter of light.)

Test results indicate that there is some reduction in the amount of solar heat transmitted through tinted glass to the inside of the car. Published results of tests by manufacturers indicate that while regular safety plate passes 82 percent of the total radiation of the sun, the special non-glare glass passes only 50 percent. This, by itself, does not of course determine the temperature in the interior of the car. In another test, the temperature of a coin was found to be 15 degrees lower in the same stationary car when that coin was shielded from the sun's direct rays below the tinted glass and another coin was placed below clear glass. CR has not had opportunity yet to verify this finding, but would point out that the lower temperature of the coin does not correspond to an equivalent lowering of the temperature of the car for the occupants on a hot, sunny, summer day. That is a more complex question, for bodily discomfort is determined not only by the heat radiation of the surfaces inside the car, but also by the temperature of the air, and the speed of air flow within the car. As has been noted, this lowered temperature is achieved at considerable cost in visibility of objects along the road, and it would have been better to reduce the glass area by a corresponding small percentage and thus retain good visibility through what remains while reducing the amount of heat transmitted into the car body. The light transmission through windshields, according to safety glass standards, must not be less than 70 percent, and this is *barely exceeded* by the tinted glass. Clear safety glass transmits about 88 percent of the available light at night (which is the critical driving condition).

The problem, indeed, has its amusing aspects, since car designers have lately been *increasing* the glass area in a car so as to offer a better view of the road and of the scenery. (At best, the modern cars are still a long way in this respect from the old cars from which one could obtain a good view of passing scenery, even in the mountains, without getting out of the car.) Now they are pushing tinted glass as a way of reducing the extra heat input from the sun coming through the larger glass areas of windows and windshield. Interesting — and contradictory, too — is the use of a gradually shaded tint near

the top of some windshields, which reduces the effective viewing angle that was originally claimed to be so advantageous and one of the primary reasons for enlarging the glass areas of the car.

Riding Comfort

The determination of riding comfort is an extremely complex problem, for while instruments are available for measuring pitch and roll, no satisfactory means have been developed for evaluating the "bounce," which is the motion of chief importance. Other factors involving riding comfort are the dimensions, shape, and cushioning of the seats. Cars which give a "soft" ride, with a certain amount of pitching and rolling, often cause car sickness in certain individuals; such people much prefer the harder-riding cars, when the bounce is quickly snubbed by the shock absorbers. The riding comfort, as expressed in CR's listings, is based on the experience of several engineers driving and riding in the test cars. Opinions, however, were not always unanimous. For example, one driver and passenger complained of fatigue and backache after a drive of only 70 miles in one car, while other drivers found the same car quite satisfactory. It was found that the height of the seats was 1-1/2 to 2 inches less than normal and consequently the upper part of the leg was not supported so well as with the higher seats; this was probably one of the reasons for the fatigue noted. There is no doubt that the matter of discomfort in the seats of a given car depends to a considerable extent upon such individual and personal factors as the passenger's health, his height, his weight, the length of his legs in relation to the rest of his body, and a number of other less obvious factors. For these and other good reasons, it is a wise policy, where there is any possible doubt, to determine seating and riding comfort of a car for oneself by taking as long a ride as practicable, up to 50 miles or so, in a demonstrator or a rented car of the make and model in question. A car that turns out to be seriously uncomfortable for a particular individual, especially the driver, can be a very unsatisfactory investment.

Additional Automobile Listings

A

Chevrolet Styleline Special. \$1760 delivered N.Y.C. Engine: 6 cylinders, overhead valves, 3½ in. bore x 3¾ in. stroke; 216.5 cu. in. displacement; rated

brake hp., 92 at 3400 rpm.; taxable hp., 29.4; compression ratio, 6.6 to 1. Engine oil capacity, 5 qt.; pressure-type cooling system, 15 qt.; gasoline tank, 16 gal. Equipped with manual-type choke. Gear ratio, 4.11 to 1. Steering factor, 4.6 (satisfactory). Battery, 100-amp.-hr. For exterior and interior dimensions, see *Chevrolet DeLuxe Powerglide* in May BULLETIN. Tire size, 6.70 x 15 (adequate). Brake area, 158 sq. in.; brake factor, 41. Acceleration from 20 to 50 m.p.h., 14.1 seconds (below average); from 40 to 60 m.p.h., 11.6 seconds (average). Gasoline mileage under test conditions: at 30 m.p.h., 23.1 m.p.g.; at 50 m.p.h., 18.2 m.p.g. (satisfactory). On riding comfort, see comments on *Chevrolet Powerglide* (May BULLETIN). Ratio of car weight, front to rear, 53% to 47% (more favorable than average). Total weight, 3285 lb. Shipping weight, 3115 lb. Estimated depreciation, the lowest of current cars. Speedometer errors: at indicated speed of 20 m.p.h., actual speed 20.3 m.p.h.; at 35 m.p.h., 34.8; at 50 m.p.h., 48.5.

A- (with Fluid-Matic, B+)

Chrysler Windsor 6. \$2590 delivered N.Y.C. Engine: 6 cylinders, L-head, 3-7/16 in. bore x 4¾ in. stroke; 264.5 cu. in. displacement; rated brake hp., 119 at 3600 rpm.; taxable hp., 28.36; compression ratio, 7.0 to 1. Engine oil capacity, 5 qt.; pressure-type cooling system, 17 qt. capacity; gasoline tank, 17 gal. Equipped with automatic choke. Gear ratio, 3.9 to 1. Steering factor, 4.7. Battery, 120-amp.-hr. Wheelbase, 125½ in.; over-all length, 207¾ in.; width, 75½ in.; height, 65 in. Tread width: front, 56-5/16 in.; rear, 59-9/16 in. Tire size, 7.60 x 15, adequate. Brake area, 201 sq. in.; brake factor, 46. Hand brake located on drive shaft. Frame, box-section side rails with 4 cross members. Minimum road clearance, 8 in. Usable seat widths: front, 56 in.; rear, 54 in. Headroom:¹ front, 36 in.; rear, 36½ in. Leg room: front, 40 in.; rear, 37 in. Test car, a deluxe model, was equipped with Fluid-Matic transmission. Acceleration from 0 to 30 m.p.h., 8.5 seconds; from 20 to 50 m.p.h., 10.5 seconds (good); from 40 to 60 m.p.h., 12.8² seconds (below average). Gasoline mileage under test conditions: at 30 m.p.h., 20.2 m.p.g.; at 50 m.p.h., 17 m.p.g. Vision over hood, good; to rear, very good. Wipers, 2-speed electric. Front and rear fenders, bolted (desirable). Accessibility of spare tire, good. Trunk space, adequate. Wheels and tires readily accessible for servicing. Riding comfort, good. Car handled easily under all conditions. Ratio of car weight, front to rear, 55% to 45% (about normal for today's cars). Total weight, 3900 lb. Shipping weight, 3640 lb. Estimated depreciation, high. Speedometer errors: at indicated speed of 20 m.p.h., actual speed 19.1 m.p.h.; at 35 m.p.h., 33.6; at 50 m.p.h., 46.5.

¹Without passengers. A person of average weight will compress a car seat from 2 to 5 in., as a rule, increasing headroom by like amounts.

²In fourth gear. (To avoid overspeeding of engine, third-gear operation was not attempted in this range.)

B+

Hudson Wasp. \$2518 delivered N.Y.C. Extras: Overdrive, \$111; *Hydra-Matic*, \$176. Engine: 6 cylinders, L-head 3.9/16 in. bore x 4 3/8 in. stroke; 262 cu. in. displacement; rated brake hp., 127 at 4000 rpm.; taxable hp., 30.45; compression ratio, 6.7 to 1 (7.2 to 1 optional). Engine oil capacity, 7 qt.; pressure-type cooling system, 18 1/2 qt. capacity without heater; gasoline tank, 20 gal. Equipped with automatic choke. Gear ratio, 4.10 to 1 (4.55 to 1 with overdrive, 4.10 to 1 optional, 3.58 to 1 with *Hydra-Matic*). Steering factor, 4.5. Battery, 100-amp.-hr. Wheelbase, 119 1/2 in.; over-all length, 203 in.; width, 77 1/4 in.; height, 62 in. Tread width: front, 58.5 in.; rear, 55.5 in. Tire size, 7.10 x 15 (overloaded). Brake area, 159 sq. in.; brake factor, 38. Foot brake was mechanically connected to rear service brake shoes to provide emergency braking in event of failure of hydraulic system (a very desirable arrangement). Hand brake protected against freezing. Body and frame built in one unit of sturdy construction; part of frame runs outside of rear wheels. Fresh-air intake to heater through cowl ventilator (desirable). Minimum road clearance, 8.3 in. Usable seat widths: front, 62 in.; rear, 59 in. Headroom:¹ front, 36 in.; rear, 36 in. Leg room: front, 39.5 in.; rear, 36 in. Car tested had overdrive, 4.10 to 1 rear-axle ratio, and 7.2 to 1 compression ratio. Acceleration from 20 to 50 m.p.h., 12.3 seconds; from 40 to 60 m.p.h., 10 seconds (both about average). Gasoline mileage under test conditions: at 30 m.p.h., 18.4 m.p.g. (22.8 m.p.g. in overdrive); at 50 m.p.h., 14.8 m.p.g. (low) (18.1 m.p.g. in overdrive). Vision over hood, good; to rear, fair. Wipers had vacuum booster (desirable). Accessibility of spare tire, fair. Trunk space, adequate. Rear wheels more difficult to remove for tire servicing than on most cars. Riding comfort, very good at all speeds. General behavior on the road and stability on curves, excellent. Car handled easily but had less self-straightening effect after a turn than many other cars. Engine was somewhat noisy at idling and low speeds. Ratio of car weight, front to rear, 56.5% to 43.5% (less favorable than average for today's cars). Total weight, 3730 lb. Shipping weight, 3485 lb. Depreciation likely to be very high. Speedometer errors highest so far observed on any car: at indicated speed of 20 m.p.h., actual speed 17.1 m.p.h.; at 35 m.p.h., 28.6; at 50 m.p.h., 41.6.

B+

Hudson Hornet. \$2824 delivered N.Y.C. Engine: 6 cylinders, L-head 3.13/16 in. bore x 4 1/2 in. stroke; 308 cu. in. displacement; rated brake hp., 145 at 3800 rpm.; taxable hp., 34.88; compression ratio, 7.2 to 1 (6.7 to 1 optional). Engine oil capacity, 7 qt.; pressure-type cooling system, 18.5 qt. capacity without heater; gasoline tank, 20 gal. Equipped with automatic choke. Gear ratio, 4.1 to 1 (4.55 to 1 optional, 3.58 to 1 with *Hydra-Matic*). Steering factor, 5.7 (very high, undesirable). Battery, 100-



Hudson Hornet

amp.-hr. Wheelbase, 123 1/2 in.; over-all length, 208 1/2 in.; width, 77.3 in.; height, 60.4 in. Tread width: front, 58.5 in.; rear, 55.5 in. Tire size, 7.10 x 15 (overloaded). Brake area, 159 sq. in.; brake factor, 36.5. For interior body dimensions and comments on other topics, see *Hudson Wasp*. Car tested had overdrive, 4.1 to 1 axle ratio, 7.2 to 1 compression ratio, and was equipped with two carburetors, and a special intake manifold. Acceleration from 20 to 50 m.p.h., 9.5 seconds (good); from 40 to 60 m.p.h., 7.1 seconds (very good). Gasoline mileage under test conditions: at 30 m.p.h., 16.9 m.p.g. (21.5 m.p.g. with overdrive); at 50 m.p.h., 12.6 m.p.g. (15.1 m.p.g. with overdrive). Riding comfort, very good at all speeds. General behavior on the road and stability on curves, excellent. Car handled easily but had less self-straightening effect after a turn than many other cars. Ratio of car weight, front to rear, 55.5% to 44.5% (about normal). Total weight, 3875 lb. Shipping weight, 3600 lb. Estimated depreciation, very high. Speedometer errors: at indicated speed of 20 m.p.h., actual speed 19 m.p.h.; at 35 m.p.h., 32.8; at 50 m.p.h., 47.

Explanation of Listings

In the table of listings, the *Brake Factor* is a number indicative of the probable relative life of the brake linings; a high brake factor is important from the standpoint of safety in use of the car, and probable low cost of brake maintenance. Cars with automatic transmissions require brakes that have a longer life built into them (with less need for frequent adjustment), than cars with standard gear shifts, because the reduced amount of engine braking available with automatic transmissions puts an extra burden on brakes and wears out brake linings sooner. (Overdrive, with freewheeling, also imposes an extra burden on brakes.) The brake factor

figures are obtained by dividing the total area of the brake linings in square inches by the shipping weight of the car plus the weight of five passengers at 150 lb. each, or 750 lb. (450 lb. for the *Crosley*, 600 lb. for the *Nash Rambler*), and multiplying by 1000 (to avoid fractional numbers).

Engine Revolutions per Mile is considered to give a rough relative measure of the probable or expected rate of engine wear, when other conditions are equal.

Headroom and Leg Room are based on measurements in the car with no passengers. Actual headroom available for passengers will be somewhat greater, depending upon the weight of the person and the amount of "give" in the seat cushions.

Estimated Depreciation is based on the difference between the original New York City price of the most nearly comparable 1951 car and the turn-in value of that car as given in the Official Used Car Guide for May 1952, published by the National Automobile Dealers Used Car Guide Co., 1026 17 St., N.W., Washington 6, D.C. The estimates of depreciation, *low, medium, high, very high*, should be used only as indications of *relative* depreciation of the various cars under normal conditions. (They are based on numerical averages for 19 states east of the Mississippi River but, as relative terms, will apply generally.)

The *Steering Factor* is believed to be a more accurate method of expressing the properties of the steering mechanism than the "steering gear ratio" often given. The steering factor is obtained by multiplying the number of turns of the steering wheel to turn the front car wheels from full right to full left by the length of the wheelbase in inches, and dividing the product by 100 times the angle turned by the car wheels in radians. A number that is too high is undesirable from a safety standpoint (slow steering response); a low number (except in the case of cars with power-assisted-steering) would indicate hard steering at low speeds and relatively great physical effort required of the driver in parking.

Maximum Brake Horsepower at stated revolutions per minute is the figure claimed by the manufacturers. The actual maximum brake horsepower delivered to the rear axle will be considerably less, as manufacturers' brake horsepower figures are nearly always based on performance of the "bare engine."

Acceleration tests are made by approaching the starting line, in high gear, at each of two constant speeds, one of 20 and one of 40 m.p.h.,

then immediately pressing the accelerator pedal to the floor. In cars with standard transmissions, no changing of gears is involved. The ranges 20 to 50 m.p.h. and 40 to 60 m.p.h. have been selected to give an indication of the ability of the particular car to pass another slower-moving car or truck on the road. On most of the cars with automatic transmissions, acceleration tests were also made in the 0 to 30 m.p.h. range.

Miles-per-gallon figures were obtained with a standard m.p.g. tester on a level road at 50 m.p.h. The m.p.g. obtained in normal country driving, which will include some stopping and starting, and acceleration, should be between 0.8 and 0.9 of these figures.

Miles-per-gallon figures are also given as obtained in the *Mobilgas* economy run. These figures are *considerably* higher (approximately 25% in two cases of cars where equipment and gear ratio were the same and the comparison could be made) than the consumer will be able to obtain with his car. The majority of the cars in this run were equipped with overdrive; exceptions were: *Chevrolet Styleline* and *Chrysler Windsor*, standard transmissions; *Packard 300* and *400 Ultramatic*; *Lincoln Capri, Hydra-Matic*; *Chrysler Saratoga* and *Imperial*, semiautomatic transmissions; and *Chrysler Crown Imperial, Fluid Torque* transmission.

The ratings of the cars as a whole are based partly on actual tests of 27 of the models by CR's engineers and consultants, partly on reports from consultants and subscribers. (It was not possible to test in detail all the 45 cars listed, in the time available; however, the cars not closely studied were for the most part in the high price ranges which constitute only a very small percentage of the cars purchased by American consumers.)

Recommendations in Seven Price Groups

The cars reported were the lowest-priced four-door sedans, except for the following five, which were two-door sedans: *Crosley*, *Henry J 4* and *6*, *Nash Rambler*, and *Willys Aero Wing*. In some cases where automatic transmissions were available as extra equipment, the cars with such transmissions have also been included.

The market for new cars, except in a few makes (*Cadillac*, *Chevrolet*, and *Ford*), has softened considerably and customers are now shopping around and getting substantial reductions from list prices. This is particularly true of cars made

(Continued on page 16)

MAKE AND MODEL	N.Y.C. Delivered Price ¹	Estimated Depreciation	Wheelbase, inches	Over-all Length, inches	Over-all Width, inches	No. of Cylinders	Manufacturers' Rated Horsepower at Revolutions per Minute	H.P. per cu. in. Displacement	Percentage Weight on Front	Shipping Weight (lb.)	Com- pression Ratio		Brake Area, Sq. Inches	Brake Factor	Tire Size	Percent Overload on Tires	
											Standard	Optional					
Crosley	1107	Very High	80	148	50	4	26 @ 5200	.59	●	1365	8.0	—	●	65.36	4.50x12	None	
Price Group 1																	
Henry J 4	1442	High	100	179	69.5	4	68 @ 4000	.51	●	2295	7.0	—	●	132.43	5.90x15	None	
Henry J 6	1577	High	100	179	69.5	6	80 @ 3800	.50	●	2340	7.0	—	●	132.43	5.90x15	None	
Ford 6 Mainline	1743	Med.	115	198	73	6	101 @ 3500	.47	55.5	3175	7.0	—	4.6	170.43	6.00x16	7	
Chevrolet Styleline Special	1760	Low	115	198	74	6	92 @ 3400	.42	53	3115	6.6	—	4.6	158.41	6.70x15	None	
Ford V-8 Mainline	1819	Med.	115	198	73	V8	110 @ 3800	.46	56.5	3205	7.2	—	4.4	170.43	6.00x16	8	
Plymouth Cambridge	1829	Med.	118.5	194	74	6	97 @ 3600	.45	56.0	3105	7.0	—	4.0	158.41	6.70x15	None	
Studebaker Champion DeLuxe	1902	Med.	115	198	71	6	85 @ 4000	.50	53.5	2720	7.0	7.5	●	148.43	6.40x15	None	
Price Group 2																	
Ford 6 Fordomatic Customline	2022	Med.	115	198	74	6	101 @ 3500	.47	●	3255	7.0	—	4.6	170.42	6.70x15	8	
Chevrolet DeLuxe Powerglide	2045	Low	115	198	74	6	105 @ 3600	.45	54.0	3300	6.7	—	4.6	158.39	6.70x15	9	
Willys Aero Wing 2-Door	2069	High	108	181	72	6	90 @ 4200	.56	56.0	2545	7.6	—	3.9	133.40	6.40x15	None	
Ford V-8 Fordomatic Customline	2098	Med.	115	198	74	V8	110 @ 3800	.46	56.5	3290	7.2	—	4.4	170.42	6.70x15	9	
Nash Rambler Hard-Top 2-Door	2170	High	100	176	74	6	82 @ 3800	.48	●	2420	7.2	7.6	●	96.32	6.40x15	None	
Pontiac 6 Chieftain	2177	Low	120	203	76	6	100 @ 3400	.42	●	3280	6.8	—	3.9	164.40	7.10x15	None	
Dodge D-42 Coronet	2233	High	123.5	207	74	6	103 @ 3600	.44	54.0	3390	7.0	—	4.2	173.42	7.10x15	None	
Nash Statesman	2250	High	114	202	78	6	88 @ 3800	.45	55.0	3045	7.0	7.4	3.9	132.35	6.70x15	None	
Pontiac 8	2252	Low	120	203	76	8	118 @ 3600	.44	●	3380	6.8	—	3.9	164.40	7.10x15	None	
Studebaker Commander State	2253	High	115	198	71	V8	120 @ 4000	.52	58.5	3070	7.0	7.5	5.5	163.43	7.10x15	None	
Price Group 3																	
Mercury	2319	Med.	118	202	74	V8	125 @ 3700	.49	●	3390	7.2	—	4.5	159.38	7.10x15	None	
Buick Special	2320	Med.	121.5	205	77	8	120 @ 3600	.46	●	3665	6.6	—	4.5	179.41	7.60x15	None	
Pontiac 6 Hydra-Matic	2355	Low	120	203	76	6	102 @ 3400	.43	54.0	3405	7.7	—	3.9	164.39	7.10x15	None	
Hudson Pacemaker	2360	Very High	120	203	77	6	112 @ 4000	.48	●	3335	6.7	7.2	●	140.34	7.10x15	None	
Studebaker Land Cruiser	2428	High	119	202	71	V8	120 @ 4000	.52	57.0	3165	7.0	7.5	6.2	163.42	7.10x15	None	
Pontiac 8 Hydra-Matic	2430	Low	120	203	76	8	122 @ 3600	.45	55.0	3605	7.7	—	3.9	164.39	7.10x15	7	
De Soto DL 6	2467	Med.	125.5	208	75	6	116 @ 3600	.45	●	3540	7.0	—	3.8	201.47	7.60x15	None	

See end of table (pages 14 and 15) for footnotes.

Usable Seating Widths, Inches	Maximum Leg Room, Inches ⁴		Headroom, Inches ⁵		Min. Road Clearance, in.	Engine to Rear Wheels Gear Ratio	Engine Revolutions Per Mile ⁶	Acceleration Time in Seconds		M.p.g. at 50 m.p.h. ⁷	M.p.g. at 50 m.p.h. ⁸ Mileage-A.M.A. Run	Rating	REMARKS						
	Front	Rear	Front	Rear				Standard	Optional										
42.0	33.0	38.0	34.0	36.0	32.0	●	5.17	—	5030	—	●	●	●	Lacks durability; very high depreciation.					
53.6	51.6	43.3	36.5	35.4	33.0	●	4.55	—	3590	—	●	●	●	High depreciation.					
53.6	51.6	43.3	36.5	35.4	33.0	●	4.10	4.55 ³	3240	2510	●	●	●	High depreciation.					
54.8	54.8	42.0	38.5	36.0	34.5	8.3	3.9	4.1 ³	2870	2120	13.9	ba	11.0	a	18.9	25.5 ³ A	New engine and body.		
54.8	54.0	39.0	36.5	36.3	35.5	8.2	4.11	—	3070	—	14.1	ba	11.6	a	18.2	20.6 A	Essentially same as 1951 model.		
54.8	54.8	42.0	38.5	36.0	34.5	8.0	3.9	4.1 ³	2870	2120	13.9	ba	12.1	ba	16.8	22.1 ³ A	New as to body only.		
55.0	53.0	43.8	40.5	35.0	35.6	8.0	3.9	—	2920	—	16.0	ba	12.7	ba	17.7	23.5 ³ A	Essentially same as 1951 model.		
54.0	51.5	38.2	36.0	34.8	35.0	8.0	4.1	4.50 ³	3150	2450	17.3	ba	17.1	ba	19.7	27.8 ³ A	Some restyling — otherwise same as 1951.		
54.8	54.8	42.0	38.5	36.0	34.5	8.3	3.31	3.54	2480	2650	8.4	ba	10.8	g	12.4	ba	17.4	N.E. A	
54.8	54.0	39.0	36.5	36.3	35.5	8.2	3.55	—	2660	—	13.5	ba	12.9	ba	18.6	N.E. A	Subscribers report poor over-all gasoline mileage.		
56.3	56.5	41.0	33.0	33.0	33.5	7.5	4.10	4.56 ³	3150	2450	14.6	ba	12.4	ba	23.6 ³	N.E. B	Entirely new car.		
54.8	54.8	42.0	38.5	36.0	34.5	8.0	3.31	3.54	2480	2650	7.0	g	9.8	g	8.0	vg	17.8	N.E. A	
51.5	49.8	42.5	37.0	36.0	35.0	●	3.77	4.4 ³	2900	2370	●	●	●	●	●	N.E. B	Subscribers report favorable. Depreciation high.		
54.8	54.0	41.8	39.5	35.8	35.8	8.0	4.1	—	3030	—	●	●	●	●	●	N.E. A	Considered inferior to Pontiac 8.		
57.2	54.2	40.5	36.2	36.5	37.5	8.2	3.9	—	2890	—	11.7	a	12.9	ba	17.4	N.E. A	B + with Gyromatic.		
61.3	60.3	41.0	37.8	35.8	34.8	8.3	4.4	4.9 ³	3290	2570	14.2	ba	14.1	ba	19.1 ³	N.E. B	Turning radius too large. Depreciation high.		
54.8	54.0	41.8	39.5	35.8	35.8	8.0	3.9	—	2890	—	●	●	●	●	●	N.E. A	Essentially same as 1951 Pontiac 8.		
54.0	51.5	38.8	36.0	34.8	35.0	8.0	4.09	4.55 ³	3030	2360	12.4	a	9.5	g	19.6 ³	25.6 ³ A	V-8 engine introduced in 1951 has been satisfactory. Very high proportion of weight on front wheels (undesirable).		
55.3	55.0	39.0	37.0	35.2	35.2	8.0	3.73	4.1 ³	2760	2120	●	●	●	●	●	25.4 ³ A			
57.8	56.3	43.3	40.0	35.4	35.3	8.0	3.9	—	2830	—	●	●	●	●	●	N.E. A			
[For body dimensions see Pontiac 8]		3.07	—	2270	—						13.7	ba	12.9	ba	14.3 17.2	N.E. B			
62.0	58.0	43.2	38.0	36.5	35.3	●	4.1	4.55 ³	3030	2360	●	●	●	●	●	N.E. B	Depreciation very high.		
54.0	51.5	38.5	40.8	34.8	35.0	7.8	4.09	3.54 ²	3030	2620	10.4	g	8.5	g	18.0 ²	25.4 ³ A	Steering factor undesirably high.		
[For body dimensions see Pontiac 8]		3.07	—	2270	—						10.8	g	10.4	a	13.6 16.5	N.E. A			
56.5	54.0	40.3	35.5	35.8	35.8	8.3	3.9	3.73	2830	2710	●	●	●	●	●	N.E. A	B + with semiautomatic transmission.		

MAKE AND MODEL	N.Y.C. Delivered Price ¹	Estimated Depreciation	Wheelbase, inches	Over-all Length, inches	Over-all Width, inches	No. of Cylinders	Manufacturers' Rated Horsepower at Revolution per Minute	H.P. per cu. in. Displacement	Percentage Weight on Front	Shipping Weight, lbs.	Com- pression Ratio		Brake Area, Sq. Inches	Brake Factor	Tire Size	Percent Overload on Tires
											Standard	Optimal				
Price Group 4																
<i>Mercury Merc-O-Matic</i>	2509	Med.	118	202	74	V8	125 @ 3700	.49	57.5	3565	7.2	—	4.5	159.37	7.10x15	9
<i>Buick Special Dynaflow</i>	2513	Med.	121.5	205	77	8	128 @ 3600	.49	53.0	3765	7.2	—	4.5	179.40	7.60x15	None
<i>Hudson Wasp</i>	2518	•	120	203	77	6	127 @ 4000	.48	56.5	3485	6.7	7.2	4.5	159.38	7.10x15	7
<i>Oldsmobile Super 88</i>	2528	Low	120	204	76	V8	160 @ 3600	.53	54.5	3645	7.5	—	4.8	188.43	7.60x15	None
<i>Kaiser DeLuxe</i>	2576	Very High	118.5	211	75	6	115 @ 3650	.51	•	3240	7.3	—	•	176.44	6.70x15	8
<i>Chrysler Windsor 6</i>	2590	High	125.5	208	76	6	119 @ 3600	.45	55.0	3660	7.0	—	4.7	201.46	7.60x15	None
<i>Packard 200</i>	2607	High	122	213	78	8	135 @ 3600	.47	54.0	3665	7.0	—	5.0	168.38	7.60x15	None
<i>Nash Ambassador Super</i>	2625	Very High	121.5	209	78	6	120 @ 3700	.47	•	3460	7.3	—	•	170.40	7.10x15	6
<i>Buick Super 50</i>	2632	High	125.5	210	80	8	124 ⁴ @ 3600	.47	•	3825	6.9	7.2 ²	•	179.39	7.60x15	5
Price Group 5																
<i>Packard 200 Ultramatic</i>	2796	High	122	213	78	8	138 @ 3600	.48	55.0	3815	7.0	—	5.0	168.37	7.60x15	5
<i>Hudson Hornet</i>	2824	Very High	124	209	77	6	145 @ 3800	.47	55.5	3600	7.2	6.7	5.7	159.37	7.10x15	10
<i>De Soto Custom Firedome</i>	2826	High	125.5	209	75	V8	160 @ 4400	.58	57.0	3760	7.1	—	3.8	201.45	7.60x15	None
<i>Oldsmobile 98</i>	2838	High	124	213	76	V8	160 @ 3600	.53	54.0	3760	7.0	—	—	188.42	7.60x15	None
Price Group 6																
<i>Packard 300</i>	3179	High	127	218	78	8	150 ⁷ @ 3600	.46	•	3880	7.0	7.8 ²	•	208.45	8.00x15	None
<i>Buick Roadmaster</i>	3270	Very High	130.5	215	80	8	170 @ 3800	.53	52.0	4285	7.5	—	5.9	219.43	8.00x15	8
<i>Chrysler Saratoga</i>	3317	Med.	125.5	208	76	V8	180 @ 4000	.54	56.0	4020	7.5	—	3.3	201.42	8.00x15	None
Price Group 7																
<i>Lincoln Cosmopolitan</i>	3612	Very High	123	214	78	V8	160 @ 3900	.50	•	4125	7.5	—	•	202.41	8.00x15	5
<i>Cadillac 62</i>	3708	Low	126	216	80	V8	190 @ 4000	.57	53.0	4040	7.5	—	5.0	242.50	8.00x15	None
<i>Packard 400</i>	3852	Very High	127	218	78	8	155 @ 3600	.47	•	4115	7.8	7.0	•	208.43	8.00x15	5
<i>Chrysler Imperial 8</i>	3937	High	131.5	214	76	V8	180 @ 4000	.54	•	4315	7.5	—	•	201.40	8.20x15	None

¹ Not including city sales tax.

² With automatic or semiautomatic transmission.

³ With overdrive.

⁴ With front seat at maximum adjustment.

⁵ With seats unoccupied.

⁶ 128 hp. with Dynaflow.

⁷ 155 hp. with Ultramatic.

⁸ In most cars with Dual Hydro-Matic, figures are given for both of the "Drive" ranges.

Usable Seating Widths, Inches	Maximum Leg Room, Inches ⁴		Headroom, Inches ⁵		Min. Road Clearance, In.	Engine in Rear Wheels Gear Ratio	Engine Revolutions Per Mile ⁶	Acceleration Time in Seconds			M.A.T. at 50 mph. ⁷	M.A.T. Mobilgas AAA, Run Rating	REMARKS		
	Front	Rear	Front	Rear				Standard	Optional	Standard	Optional				
55.3	55.0	39.0	37.0	35.2	8.0	3.31	3.54	2450	2620	11.6	a	13.3	ba	16.8 N.E. B+	
[For body dimensions see <i>Buick Spec.</i>]					3.6	—	2610	—	8.0 ba	12.5 a	12.2 ba	17.7	N.E. A-		
62.0	59.0	39.5	36.0	36.0	8.3	4.10	4.55 ⁸	3030	2360	12.3	a	10.0 a	18.1 ⁸ 20.5 ⁸	B+	
57.0	57.5	40.0	42.0	35.5	35.0	8.0	3.64	3.23 ²	2640	2340	4.4 vg	8.1 vg	8.5 g	17.7 ²	N.E. A
57.0	57.3	44.8	39.8	34.6	34.0	7.0	3.91	4.55 ⁸	2920	2390	•	•	•	•	24.6 ⁸ B+ Depreciation very high.
56.0	54.0	40.0	37.0	36.0	36.3	8.0	3.90	3.73 ²	2830	2710	8.5 ba	10.5 g	12.8 ba	17.0 ² 19.4	A- B+ with semiautomatic transmission
57.2	55.5	42.2	41.2	34.5	35.8	7.8	3.9	4.1 ⁸	2830	2080	•	•	•	•	19.2 ⁸ A-
61.3	60.3	41.0	37.8	35.8	34.8	8.0	4.1	3.15 ²	3030	2330	•	•	•	•	N.E. B+ Depreciation very high.
58.5	56.3	43.3	41.5	36.0	35.8	8.0	4.1	3.9 ²	2980	2830	•	•	•	•	N.E. A- Abnormally wide body.
[For body dimensions see <i>Packard 200</i>]					3.54	—	2570	—	8.7 ba	12.3 a	11.1 a	14.9	N.E. A-		
62.0	59.0	39.5	36.0	36.0	8.3	4.1	4.55 ⁸	3030	2360	9.5 g	7.1 vg	15.1 ⁸ 20.8 ⁸	B+	Steering factor very high.	
56.5	54.0	40.3	35.5	35.8	35.8	8.3	3.73	3.54 ²	2710	2570	7.3 vg	7.2 vg	18.7 ² 21.3 ⁸	B+	New engine. B+ is a tentative rating.
57.0	57.5	40.0	42.0	35.5	35.0	8.0	3.64	3.42 ²	2640	2480	4.8 vg	9.9 g	8.7 g	13.2 17.1	N.E. A-
57.2	55.5	42.2	44.2	34.5	35.8	8.5	3.9	3.54	2770	2520	•	•	•	•	16.4 ² A-
58.0	57.5	42.0	43.5	35.5	35.5	7.5	3.6	3.9	2560	2770	9.9 g	7.1 vg	14.5	N.E. A-	Abnormally wide body. Steering factor very high.
56.5	54.5	42.8	39.0	35.8	35.8	7.8	3.54	3.73	2520	2680	7.5 g	8.6 vg	6.6 vg	15.3 ² 19.0 ²	A-
57.5	57.0	43.0	41.6	36.0	35.0	8.2	3.07	3.31	2180	2350	•	•	•	•	22.4 ² B An entirely new car.
58.0	56.0	41.0	38.5	34.3	34.3	8.0	3.36	3.07	2390	2180	5.1 vg	7.7 vg	7.0 vg	13.9 18.7	N.E. A- Not considered as fine a car as the 1951 model. Low headroom. Abnormally wide body. Brake factor very good.
57.2	55.5	42.2	44.2	34.5	35.8	8.5	3.54	—	2520	—	•	•	•	•	17.0 ² A-
56.5	55.0	42.0	41.5	38.0	36.0	•	3.54	3.73	2490	2630	•	•	•	•	19.1 ² A-

⁴ Does not include allowance for slip on cars with "fluid coupling."

¹⁰ With power steering.

N.E. — not entered

vg — very good

g — good

a — average

ba — below average in acceleration.

• — information not available.

by the smaller manufacturers such as *Hudson*, *Kaiser*, *Nash*, *Packard*, and *Studebaker*. Resistance to price reductions by the dealer is somewhat greater on faster-selling cars such as *Buick*, *Chrysler*, *Dodge*, *Mercury*, and *Lincoln*, but discounts can be obtained by those willing to haggle. Many *Plymouth* dealers, now facing stronger competition from *Ford* and *Chevrolet*, are also willing to cut prices somewhat.

When a trade-in is involved, the price reduction is accomplished by indirection through allowing a higher-than-book value for the used car. *Fords* and *Chevrolets* can usually be obtained with immediate delivery provided the customer will take the model and color the dealer has in stock; otherwise there is likely to be a waiting period of two weeks to two months. *Cadillac* still has a long waiting list, with promised deliveries running from a few months to as much as a year.

New car sales have not increased as much as was anticipated with the relaxation of credit regulations. Many, feeling that new-car prices are much too high, have turned to the used-car market. Another reason for slow sales may well be that new-car dealers have, in many cases, not been living up to their new-car guarantees and have given poor service after the sale has been made. This was very evident in the many reports subscribers have sent in on their 1951- and 1952-model cars.

Price Group 1

Tied for first choice, in CR's opinion, are the *Ford 6 Mainline* and *Chevrolet Styleline Special*. Both cars should give dependable economical transportation with low depreciation. The *Ford 6* engine, while new, has been under development for several years; it is well engineered and we believe it should give little trouble. Acceleration of both cars, though not strikingly high, will be ample for most drivers. In the opinion of those who drove CR's test cars, the 1952 *Ford 6* gave a good account of itself; it was easily the best *Ford* to drive that has been produced in the past several years. Third choice is the *Ford V-8* or the *Plymouth*. The *Ford V-8* would have a slight edge over the *Plymouth* for the hard, fast driver, and the *Plymouth* is considered the preferred car for the more conservative driver who has determined by adequate trial on the road that he finds the softer ride of this car satisfactory for himself and those who ride with him. The *Plymouth* is priced about \$70 and \$85 higher, and has a somewhat higher depreciation

than the *Chevrolet* and *Ford 6*; the difference would be offset in part if the *Plymouth* can be purchased at a price substantially below list.

Price Group 2

First choice in this group is again the *Pontiac 8* with standard transmission and 6.8 to 1 compression ratio. While the straight-eight engine of this car is believed likely to be replaced next year with the *V-8* used in the *Oldsmobile*, low depreciation makes the *Pontiac 8* an excellent car for those who may want to turn the car in in a few years, who want a car not in the lowest price group, and who can stand an additional outlay of \$400 to \$500. Second choice, *Ford V-8 Fordomatic*; third choice, *Studebaker Commander* or *Dodge D-42*, both with standard transmission. The two last-named cars have high depreciation, but otherwise are good cars.

Price Group 3

First choice, *Buick Special* with standard transmission; second choice, *Mercury* with standard transmission; third choice, *Pontiac 8* with *Hydra-Matic*.

Price Group 4

First choice, *Oldsmobile Super 88*; second choice, *Chrysler Windsor*; third choice, *Packard 200* or *Buick Super*.

Price Group 5

First choice, *Oldsmobile 98*; second choice, *Packard 200*.

Price Group 6

First choice, *Buick Roadmaster*; second choice, *Chrysler Saratoga*; third choice, *Packard 300*.

Price Group 7

First choice, *Cadillac 62*; second choice, *Chrysler Imperial 8*; third choice, *Packard 400*.

Rainboots for Women

CR tests eight brands of lightweight rainboots

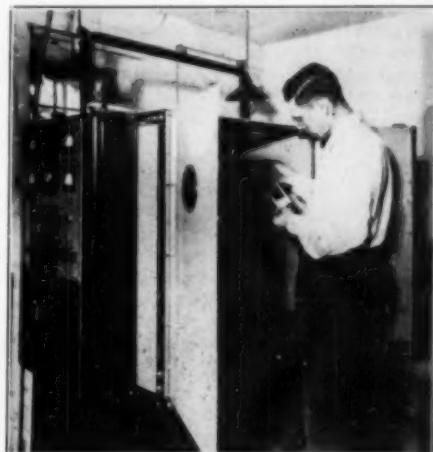
MANY WOMEN have long objected to the ungainly and heavy galoshes and boots that manufacturers make for them to wear in stormy weather. Such boots are useful in a severe rainstorm or deep snow, it is true, but they usually make feet look large and clumsy.

Back in 1943, the United States Rubber Company, in an advertisement about synthetic rubber footwear, showed a sketch of the "footwear of tomorrow" with the hint that "One day you may wear Gaytees you can see through." There is no evidence that the rubber company ever followed through on its prophecy, but many other manufacturers must have realized that the idea of lightweight "see through" rain wear for women was an appealing one.

The lightweight plastic or latex rubber rainboots now being made meet many of the objections that women had to the style and weight of boots and galoshes. Instead of weighing nine ounces or more, the new rainboots weigh five ounces or less, and many of them are small enough to be folded and carried in a handbag or the pocket of a coat. The new rainboots, as a rule, will fit over shoes with all kinds of heels, whether low, medium, or high, or wedge. They usually come in three or four sizes, "small," "medium," "large," and "extra large" — or "petite," "small," "medium," and "large," so as not to offend the sensitive woman who has a size 8 foot.

The new rainboots are easy to slip on. They have tops that open wide and have sufficient room at the ankle to allow a smooth leather or a suede shoe to slip inside easily. This roominess does not detract from a trim appearance as much as one might think because the plastic material is translucent or even reasonably transparent and thus reveals the shape and color of the shoe inside.

The large top openings are shaped by molded flutes or are closed by snaps or ties. Ties alone may be unsatisfactory because they tend to come



The Weather-Ometer, a laboratory device for simulating weather exposure. Samples of the boots were exposed for 40 hours in cycles of 102 minutes of light from two arc lamps simulating strong sunlight and 18 minutes of water spray. None of the plastic boots were affected appreciably, but the latex rubber boots became darker in color.

undone during walking. One brand tested, the *Rain Dears*, had a fluted upper and bow tie with a snap on both sides. The *Marxies* had "bows" that were pulled through holes in the front to make a gore. The *Marxies*, *Gerry*, and *Rain Dears* boots were so shaped as to be smaller around at the ankle (10 inches, 13 inches, $13\frac{1}{2}$ inches) than all other boots tested (15 to 17 inches).

The rainboots are not without their disadvantages. Some of them have fairly smooth soles and tend to be slippery. The principal disadvantage, however, is that some of them have a tendency to pick up color from the shoes over



Peek-A-Boots, Wards Shu-boots, Kerrybrooke, Marxies totes.

which they are worn. Boots worn over black suede shoes in CR's tests, for example, picked up the black color and became unsightly. Boots worn over brown or red leather shoes acquired a streak of brown or red color, possibly from the shoe polish. The colors which were acquired from the shoes seemed to have been absorbed into the plastic or rubber materials so that they could not be removed even by careful washing.

It is best to buy rainboots a little too large, rather than too small, to avoid the necessity of pulling and tugging to get them on. The boots should be washed after each wearing. This will improve their appearance, make for longer wear, and will keep them in condition for packing in their carrying case.

The materials of the boots tested were of two different kinds; plastic and latex rubber. All of the carrying cases, except the one for the *Marxies*, were made of a plastic film and in some instances appeared to have been selected by the boot manufacturer without much regard for the size of the folded boots. The *Peek-A-Boots* case was actually a head covering, *Peek-A-Bonnet*, which was judged a poor carrying case not only because of its size and shape but because many women would be disinclined to wear on their heads anything in which boots had been carried.

In the study made by CR, one sample of each brand tested was worn on stormy days for several months in order to evaluate the practicability of construction details and other features, such as means of closing, and convenience of the carrying case. The effect of wear on the shape and color of the boots was observed at the end of this period.

The materials themselves were examined and tested for thickness, tensile strength and elongation, flammability, and resistance to oil, cold, heat, and weathering (as evaluated in a Weather-Ometer). Applicable federal and military specifications, and specifications of the American Society for Testing Materials were used.

All of the materials were combustible, and

the differences between them in that respect were not deemed significant. The two test strips that were not completely consumed, from *Wards Shu-boots* and *Sears "Snug Fit"*, melted so easily that the flame dropped off before it could reach the end of the 12½-inch long sample. All of the plastic boots showed good resistance to oil, but the *Gerry* and *Marzie* boots, which were made of latex rubber, swelled. The oil-swollen areas were weak and easily damaged. The non-skid properties of the soles were only estimated since all appeared to have some non-skid properties in the use tests, and because the likelihood of slipping and falling is greatly influenced by the kind of shoes worn inside the boots, as well as by the boots themselves.

A. Recommended

Peek-A-Boots (Peek-A-Boot, Inc., 1606 S. Flower St., Los Angeles) \$1.98. "Smoky" translucent plastic with 1¾-in. band of frosting at top. Closed with ties of plastic tape with snap fasteners at both sides. Weight of single boot, 4½ oz. Plastic case, 11½ x 11¼ in., seamed at two sides to make a "Peek-A-Bonnet"; judged wrong size and shape to hold boots well. Tensile strength, relatively satisfactory; abrasion resistance, relatively good. Showed some staining at end of use test.

Sears "Snug Fit" Elasti-Glass Booties (Sears-Roebuck's Cat. No. 25-3373; made by S. Buchsbaum of Chicago) 88c, plus postage. Colorless, translucent plastic, ribbed horizontally. Closed by a fold which fastened on one of two snaps for size adjustment. Weight of single boot, 2½ oz. Thin plastic case, 6½ in. square, which seemed too small for boots (boots held case open). Plastic had lowest tensile strength of boots tested, but relatively good abrasion properties. No staining noticeable at end of use test.

B. Intermediate

The following three rainboots would have received an *A-Recommended* rating, had they not shown objectionable staining at the end of the use test.

Kerrybrooke (Sears-Roebuck's Cat. No. 25-3300) \$1.85, plus postage. Colorless, translucent plastic



Gerry Gaiters, Sears "Snug Fit," Puddlers, Rain Dears.

frosted inside; one-piece. Closed with plastic tape ties riveted at rear of upper. Cotton net inserted in heel area of sole. Weight of single boot, 3 oz. Plastic case, 10 x 12 in., marked "Rain Stormers." Made exclusively by Marshall Industries, Chicago." Tensile strength, relatively satisfactory; abrasion resistance, fairly good.

Puddlers (Plasti Industries, Winona, Minn.) \$2. Pinkish translucent plastic, frosted inside, with $\frac{1}{8}$ -in. band of frosting at top; one-piece. Closed by plastic tie with a plastic buckle. Cloth inserted in heel area. Weight of single boot, 3 oz. Plastic case, 10 x 12 in. Tensile strength, satisfactory; abrasion resistance, good.

Rain Dears (Lucky Plastic Co., Inc., Los Angeles) \$2. Colorless, translucent plastic with a $1\frac{1}{2}$ -in. fluted edge at top and molded flutes at sides of upper; one-piece. Closed with tie having snaps at both sides. Weight of single boot, $3\frac{1}{4}$ and $4\frac{1}{4}$ oz. Plastic case, 10 $\frac{1}{4}$ in. square, fastened to make two pockets, one for each boot. Snap fasteners close case securely. Boots are somewhat bulky when packed and case is relatively large. Tensile strength, low; but abrasion resistance, good.

* * *

Gerry Gaiters (Gerry Nufoam Shoe Corp., 1407 Broadway, New York 18) \$1.98. Dark blue latex rubber with fluted gores at top; thick cloth pad poorly cemented in heel. Weight of single boot, $2\frac{1}{4}$ oz. Plastic case, 8 in. square, did not accommodate boots well. Tensile strength, relatively good; abrasion resistance, poor. No staining noticeable at end of use test. Fitted foot more closely than the plastic boots.

Marxie "toes" (So-Lo-Marx Rubber Co., Cleveland) \$2.98. Red latex rubber; one-piece; closed by rubber "bows." Weight of single boot, $2\frac{1}{4}$ oz. Rubber-coated plaid fabric case, 6 x 5 in.; closed by rubber bow; made a neat, small package. Tensile strength, best of boots tested; abrasion resistance, poor. Deteriorated when exposed to oil and excessive heat, and darkened in weathering test. Somewhat stained in use test. Fitted foot more closely than plastic boots.

Wards Shu-boots (Montgomery Ward's Cat. No. 24-9409; made by National Transparent Plastic Co.) 97c, plus postage. Colorless, translucent plastic. Closed by a snap at front. Weight of single boot, $1\frac{1}{4}$ oz. Thin plastic case, $4\frac{1}{2}$ x $11\frac{1}{2}$ in. Tensile strength, good; abrasion resistance, poor. Very little staining noticeable at end of use test.

Deepfreeze Home Freezer

THE Deepfreeze Model C-12, reported in CONSUMERS' RESEARCH BULLETIN, December 1951, has been discontinued and replaced by Model C-13, report on which appears below.

B. Intermediate

Deepfreeze, Model C-13 (Deepfreeze Appliance Div., Motor Products Corp., North Chicago, Ill.) \$460 (\$35.40 per cu. ft.). Rated capacity, 12.86 cu. ft. (450 lb. of assorted foods). Actual usable storage capacity, 13 cu. ft. in two compartments, one 3.2 cu. ft. and the other 9.8 cu. ft. Small compartment was not a quick-freezing compartment; foods to be frozen were required to be placed in contact with the refrigerated walls. Sealed motor-compressor unit located at left-hand side under the smaller storage compartment. Temperature control dial (lacking the desirable "off" position) on front of cabinet near floor. Had white and red warning lights to indicate when unit was not operating satisfactorily, and current interruption (both lights off). White baked-enamel finish inside and out. Single lid covering full top of freezer, mounted on 3 spring-controlled hinges;

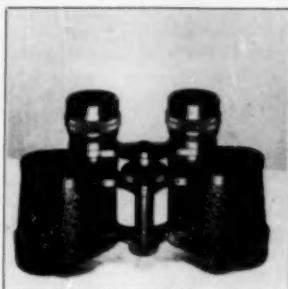
lid moved easily and was held tightly with chromium-plated clasp with built-in lock. Over-all dimensions, $55\frac{1}{4}$ x 30 x $37\frac{1}{4}$ in. Depth of small storage compartment, $17\frac{1}{4}$ in.; of large compartment, $29\frac{1}{4}$ in. Required 12 hr. to pull down from 110° to 2.2° (only fair). In no-load test at 90° , percentage running time 68.2% (undesirably high). In storage load test, percent running time 67.5%, somewhat high, but better than Deepfreeze C-12 previously tested, and energy consumption per lb. of food was about 18% higher than that of the two A-Recommended freezers listed in the December 1951 BULLETIN (Hotpoint and Amana). Frozen food stored in box was found to remain below 25° for 11.6 hr. in small compartment, 12.1 hr. in large compartment, after cut-off of electricity supply (only fair insulating performance). Starting current, 15.7 amp. (maximum 20.8 amp.). Probable cost of operation under normal conditions of use with electricity at $3\frac{1}{2}$ ¢¹ per kWhr., \$3.64 per month (28c per cu. ft. — about average). ²

¹Approximate operating costs at other rates may be computed by simple proportion. For example, if you pay 2c instead of 3 $\frac{1}{2}$ ¢ per kWhr., cost for electricity becomes \$3.64 x 2 + $3\frac{1}{2}$ or approximately \$2.08 per month.

18 Prism Binoculars and 6 Opera Glasses



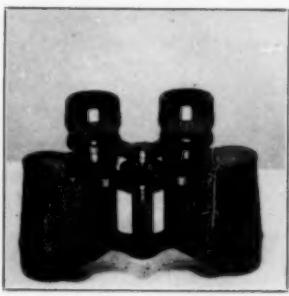
Bushnell Triple Tested 7x50



Barr and Stroud C.F. 24, 8x30



Novar 7x50



E. Leitz 6x30 Bidoxit



Huet Miralux 8x30



French Micra 5x

THE present article gives listings of binoculars and opera glasses and supplements material which appeared in the September 1951 CONSUMERS' RESEARCH BULLETIN, which included along with listings of 13 glasses, important information for anyone planning to buy field glasses of any kind, together with advice on the magnifications desirable, the problem of selection for a person wearing glasses, the choice of types of focusing device, and other important points. Since most good binoculars are expensive, the user who plans to buy one will find it worth his while to review the previous article for the

fuller discussions of the individual binocular listings and for the text which accompanied and explained the listings. Of the two figures for weight given in each listing, the first weight is that of the binocular or opera glass itself, the second is the instrument plus the case. Binoculars listed had coated optics and central focus except as noted. The exit pupil is found by dividing the effective diameter of the objective lens by the magnification. The eye distance, noted in the listings, indicates the position of the exit pupil and therefore the position of the pupil of the observer's eye if the entire field is to be seen and

all the available light utilized. For an observer with no glasses, there is no difficulty in positioning the eye pupil at the correct distance from the eyepiece mount, but if glasses are worn, the distance from the pupil of the eye to the front vertex of the spectacles may be as much as 12 mm., and removal of the "eye cup," which may have a depth of as much as 6 mm. itself, may be necessary in order to permit the eye to be close enough to the eyepiece.

A large exit pupil such as is afforded in the 7x50 size adds to the convenience of a glass, as it permits it to be clapped to the eyes and effectively utilized without delay. (The large exit pupil gives a higher tolerance for position of the glasses and thus, centering before the eye, can be carried out more rapidly than when the exit pupil is smaller.) The large size of the 7x50 binocular is unobjectionable if it is to be kept in the house, as for bird watching, or carried mostly in the car. Some 7x50 binoculars, as will be noted in the present article and the one in the September 1951 *CONSUMERS' RESEARCH BULLETIN*, are light in weight, around one to two pounds, and are thus convenient to handle.

People with appreciable astigmatism should keep their glasses on when using binoculars, and buy the special shallow eye cups that are adapted for their use, and are made available with some makes for those who wear spectacles when using the instrument.

Much of the advertising of Japanese glasses is objectionable in character, in the broadness of the claims, and in the use of testimonials instead of the facts of the laboratory as a basis for selling. One brand, for instance, uses a group of big names as a reason for buying — persons who are said to have bought the binoculars. These persons are corporation executives or

board chairmen, politicians, and others who would have no special knowledge or facility in the selection of optical instruments, whose names, therefore, would mean no more on this type of question than movie actresses' would with regard to a brand of auto tires. One particularly objectionable example was a postcard offering some "powerful vest pocket prism binoculars that are small enough to fit in palm of your hand still are as powerful as Army binoculars that sell for over \$100 each. . . . wonderful glasses. . . . 10 days trial." If the product were as meritorious as the claims indicate, the power could be *stated* rather than referred to in vague terms used. More important, the diameter of the object glass (objectives), which is doubtless too small to look well in print, could be given.

Binoculars

A. Recommended

Bushnell Triple Tested 7x50 (Sold by D. P. Bushnell & Co., Bushnell Bldg., Pasadena 1, Calif.) \$45, plus tax. Eye distance, 16 mm. Field of view, 375 ft. at 1000 yd. Weight, 2.2 lb. (3.2). Individual focus. The diopter index mark is on the prism cover plate rather than ocular tube. This design makes correct resetting of focusing somewhat difficult. Exit pupil was "cut off" on both barrels. The prisms are held in position by a peening process; this can lead to severe strain on a prism and resultant fracture of the glass. ¹

Novar 7x50 (Nippon Kogaku, Tokyo) \$65, plus tax. Eye distance, 19 mm. Field of view, 370 ft. at 1000 yd. Weight, 2.3 lb. (3.5). Individual focus. One screw only to hold prism cover plate, which is considered poor design for a 7x50 glass. ²

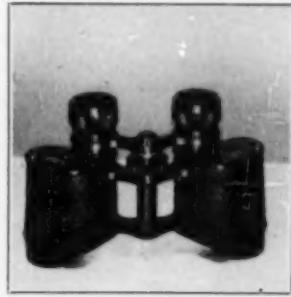
Barr and Stroud C.F. 24, 8x30 (Glasgow and London)



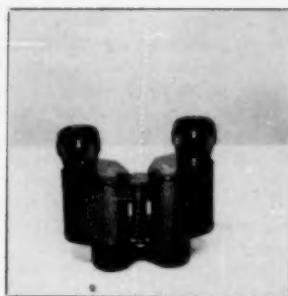
Kern Aarav Alpin Lux 6x30 AR



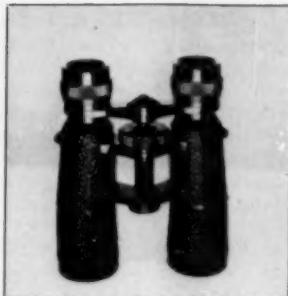
French Micro 8x



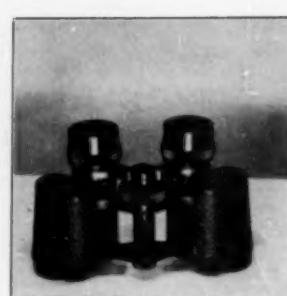
Wray Raylux 8x30



Kern Aarav Alpico 8x18 AR



Hensoldt Sport-Dialyt 6x30



Lemaire Legere 6x25

\$125, plus tax. Eye distance, 11 mm. Field of view, 450 ft. at 1000 yd. Weight, 1.4 lb. (2.3). Optics not coated. Had "gray" prisms, which were too small, and so caused "cut-off." Claimed "extra wide angle" although angle was actually 8.5° (about average). 3

E. Leitz 6x30 Bodoxit (Wetzlar, Germany) \$125, plus tax. Eye distance, 11 mm. Field of view, 450 ft. at 1000 yd. Weight, 0.9 lb. (1.6). 3

French Micra 8x (Sears-Roebuck's Cat. No. 4-6219E) \$129.50, including 20% tax. Eye distance, 7 mm. Field of view, 470 ft. at 1000 yd. Weight, 0.8 lb. (0.9). This binocular has reverse prisms, an arrangement which causes marked reduction of stereovision effect. 3

Huet Miralux 8x30 (Paris) \$115, plus tax. Eye distance, 9 mm. Field of view, 470 ft. at 1000 yd. Weight, 1.0 lb. (2.0). 3

Kern Aarav Alpin Lux 6x30 AR (Switzerland) \$112, plus tax. Eye distance, 11 mm. Field of view, 450 ft. at 1000 yd. Weight, 1.0 lb. (1.6). 3

B. Intermediate

French Micra 5x (Sears-Roebuck's Cat. No. 4-6218E) \$114.50, including 20% tax. Eye distance, 8 mm. Field of view, 740 ft. at 1000 yd. Weight, 0.7 lb. (0.8). Dirt on both sides of the field lenses. This binocular has reverse prisms (reduction of stereovision effect). 2

Wray Raylux 8x30 (London; listed by Montgomery Ward & Co. as Wraylux under Cat. No. C7030L) \$64, tax included. Eye distance, 7 mm. Field of view, 370 ft. at 1000 yd. Weight, 1.2 lb. (2.0). Optics not coated. Right field lens dirty; actual magnification on same sample was 7, not 8 as claimed. The left prism cover plate was loose on a second sample. 2

Hensoldt Sport-Dialyt 6x30 (Wetzlar, Germany) \$120, plus tax. Eye distance, 11 mm. Field of view, 370 ft. at 1000 yd. Weight, 0.8 lb. (1.3). Poor hinge action. Collimation, poor. Uses roof prism for inline viewing which causes some loss in stereo vision effect. 3

Kern Aarav Alpico 8x18 AR (Switzerland) \$110, plus tax. Eye distance, 8 mm. Field of view, 340 ft. at 1000 yd. Weight, 7.9 oz. (9.5). This binocular has reverse prisms (marked reduction of stereovision effect). 3

C. Not Recommended

Jupiter Jr. 6x15 (Made in Occupied Japan) \$16, plus tax. Field of view, 420 ft. at 1000 yd. Weight, 4.7 oz. (6.3). Individual focusing. The diopter index mark is barely visible; this fault makes the index setting almost useless. Test sample had a fractured prism. Hinge action too loose. 1

Lemaire Legere 6x25 (Paris) \$85, plus tax. Eye distance, 12.5 mm. Field of view, 470 ft. at 1000 yd. Weight, 0.8 lb. (1.5). Optics not coated. Both field lenses dirty. Poor mechanical finish and engraving. Out of collimation. 2

Wray Adastral 7x50 (London; Sears-Roebuck's Cat. No. 4-06223E) \$119.50, tax included. Eye distance, 14 mm. Field of view, 370 ft. at 1000 yd. Weight, 1.9 lb. (3.3). Poor polish on the prisms. Right prism cover plate loose and moisture film on the prism. Both exit pupils "cut off." A second sample marked Tower was claimed by the distributor to be the same as the Adastral. Dirt was found on both field lenses of this glass. 3

Wray Crystar 6x30 (London) \$90, plus tax. Eye distance, 13 mm. Field of view, 420 ft. at 1000 yd. Weight, 1.0 lb. (1.8). Left objective loose. Dirt and moisture film on objectives. Exit pupil of left ocular "cut off." Actual magnification was 5.4, not 6 as claimed. 2

Wray Raylite 8x30 (London) \$95, plus tax. Eye distance, 7 mm. Field of view, 370 ft. at 1000 yd. Weight, 1.0 lb. (1.9). Dirt and moisture film on objectives. The exit pupil of the left ocular was "cut off." Right objective cover cracked and right prism cover plate loose. The actual magnification was 7, not 8 as claimed. 2

Wray Raylite 8x30 Wide Angle — Coated (London; Sears-Roebuck's Cat. No. 4-06224E) \$66.25, plus

tax. Eye distance, 7 mm. Field of view, 450 ft. at 1000 yd. Weight, 1.0 lb. (2.0). A second sample marked *Tower* was claimed by the distributor to be the same as this *Raylite*. The left prism of the *Tower* was scratched. A third sample was out of collimation. The actual magnification was 7, not 8 as claimed, on all three samples. ²
ard 6x20 (Kollsman Instrument Div., Square D. Co., Elmhurst, N.Y.) \$165, plus tax. Field of view, 450 ft. at 1000 yd. Weight, 4.4 oz. (6.6). Right prism scratched. Reverse prisms (with reduction of stereo-vision effect). ³

Opera Glasses

The following glasses are of the Galilean type. On all these glasses, the optics are not coated and neither eyepiece is adjustable unless otherwise noted.

A. Recommended

Rodenstock Aldon 2.5x (Munchen, Germany) \$28.50, plus tax. Field of view, 45 ft. at 200 ft. Weight, 4.3 oz. (5.7). ³

B. Intermediate

Carl Leise Sportster 3x28 (Wetzlar, Germany) \$30, plus tax. Field of view, 32 ft. at 200 ft. Weight, 4.0 oz. (6.3). Coated optics. Lint found on left eyepiece. ³

Rodenstock Adar 4x (Germany) \$32.50, plus tax. Field of view, 26 ft. at 200 ft. Weight, 9.3 oz. (14.4). Lint found on both oculars. ³

Wollensak Allscope 3x (Wollensak Optical Co., Ave. D and Hudson, Rochester, N.Y.) \$32.50, plus tax. Field of view, 33 ft. at 200 ft. Weight, 3.0 oz. (6.0). Coated optics. A small light opera glass built with earpieces and so adapted to be worn in the same manner as eyeglasses, for sports events and at the theater. Individual focus. The user may or may not like this design, and if possible should arrange to try the device for a reasonable period before deciding. ³

C. Not Recommended

Ofuna 3x10^o (Made in Occupied Japan) \$15, plus tax. Field of view, 37 ft. at 200 ft. Weight, 6.0 oz. (8.0). Fixed interpupillary distance (no hinge action). ¹
Pride To Ko 2.5x (Made in Occupied Japan) \$10, plus tax. Field of view, 40 ft. at 200 ft. Weight, 4.8 oz. (6.0). No hinge action. ¹

* * *

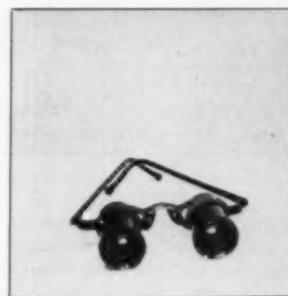
For the convenience of the reader who may not have the September 1951 BULLETIN at hand, highly abbreviated listings of prism binoculars already reported are given below.

A. Recommended

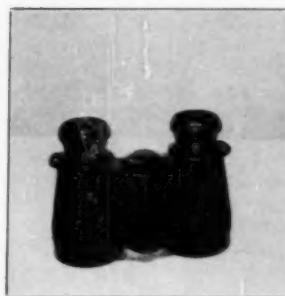
Bausch and Lomb Zephyr 6x30; 7x50; Zephyr 9x35 (Bausch & Lomb Optical Co., Rochester, N.Y.) \$155, \$175, \$170, plus tax. Eye distances, 8 mm., 12.5 mm., 12 mm., respectively. Field of view, 450, 370, and 370 ft. at 1000 yd. ³

Sard 7x50 (Kollsman Instrument Div., Square D. Co., Elmhurst, N.Y.) \$181.50, plus tax. Weight, 2.9 lb. (heaviest binoculars of those tested). Eye distance, 10.5 mm. Field of view, 370 ft. at 1000 yd. ³

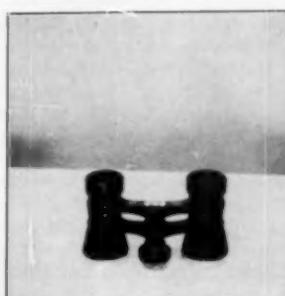
Zeiss "Silvarem" 6x30; "Binocitem" 7x50; "Deltrintem" 8x30 (Zeiss, Jena) \$125, \$175, \$135, plus tax. Weight of 7x50 glass, 1 lb. (lightest of 7x50 glasses)



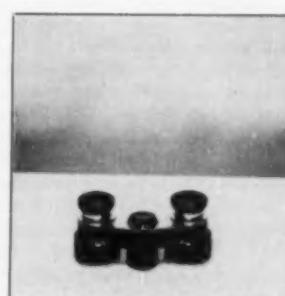
Wollensak Allscope 3x



Rodenstock Adar 4x



Carl Leise Sportster 3x28



Rodenstock Aldon 2.5x

tested). Eye distances, 11 mm., 12 mm., 10 mm. Field of view, 450, 370, 420 ft. at 1000 yd. Actual magnification of "Deltrintem" 8x30 was 7.7. 3

B. Intermediate

Asterette 7x35 (Believed to be Meibo, Toyada, Japan) \$59.50, plus tax. Eye distance, 12 mm. Field of view, 370 ft. at 1000 yd. Prisms were too small. 2

Habicht-DV 6x30 (Swarovsky Optics, Austria) About \$75, tax included. Eye distance, 13 mm. Field of view, 420 ft. at 1000 yd. One sample was out of collimation. On second sample, right objective was loose. Otherwise the three samples were comparable to the *Bausch and Lomb* binoculars. 2

C. Not Recommended

Emden 6x39 (Emden, Germany) \$49, plus tax. Eye distance, 11 mm. Field of view, 450 ft. at 1000 yd. Cover poorly cemented. Left objective loose, prisms too small. 1

Ofuna 7x50 (Ofuna, Japan) \$45, plus tax. Weight, 1.2 lb. Eye distance, 14.5 mm. Field of view, 370 ft. at 1000 yd. Right objective loose, left one spotted. Prisms were too small. 1

Vista 7x50 (Believed to be Meibo, Toyada, Japan) \$37.25, plus tax. Weight, 1.2 lb. Eye distance,

14.5 mm. Field of view, 370 ft. at 1000 yd. Objectives loose, left objective spotted. Prisms too small. Out of collimation. 1

Unidentified French 12x45 (Believed to be Deraisme, France) \$75, plus tax. Optics were not coated. Eye distance, 5 mm. Field of view, 260 ft. at 1000 yd. Loose objective, which caused an unsatisfactory image because of high magnification. Dirt on field lens. 2

* * *

While there are many dealers who sell binoculars, it is difficult even in large cities to find stores which offer a fairly wide range of makes and country of origin, and which select binoculars with some degree of knowledge of their properties and faults. In general, it will be safest to buy binoculars from dealers who specialize in optical goods or photographic supplies of one sort or another rather than from general stores, department stores, ordinary sporting goods dealers, etc. Two stores in New York City known to have rather exceptionally large stocks of binoculars are: E. B. Meyrowitz, Inc., 520 Fifth Ave., near 43 St.; and August Waeldin, Inc., 10 Maiden Lane.

Off the Editor's Chest

(Continued from page 2)

fore, make it a point, where space permits, to include information about methods of test to stimulate the engineers and scientists of manufacturing concerns to bring CR's knowledge and experience to bear on the products of their companies, likewise to encourage them to pass on to us their comments and criticisms of test methods or findings.

When CR's report on electric ironers appeared in 1948, we received a request from one of the largest appliance manufacturers for detailed information regarding our test procedure. (The ironer is one of the scores of appliances used by consumers on which no official or accepted test methods exist.) CR's report represented a pioneering study in this field, as did, for example, the test procedure on tennis balls, sewing machines, audio amplifiers, cameras, automatic toasters, washing machines, dishwashers, broilers and table stoves, steam irons, men's hats, auto waxes and other chemical specialties, and many other items reported in recent BULLETINS.

Sometimes manufacturers copy for use in their own laboratories and plants the testing apparatus and instruments that have been devised by CR. Important among such cases is our razor-blade testing device, of which four units constructed according to CR's design, by two commercial machine shops, have been put into use by four razor-blade manufacturers. Another instance is a device used by CR in testing the resistance of the material of felt hats to bending. One of these is in use in a big textile testing laboratory and two others are in regular service in large hat manufacturing plants as a means for "screening" hat felts of types that do not give long service in a hat.

CR's test methods applied to electric shock hazard of appliances have resulted in the marked improvement of a number of commercial articles, as a result of the manufacturer's exercising a more critical attitude toward test routines in his factory. In one instance, the considerable shock hazard present in a dictating machine was

remedied; in another, a large manufacturer of radio receivers was pleased to report that in curing the trouble with shock hazard which we had reported in one of his sets, he had succeeded in making an important improvement in performance in another respect. There are other groups in industry to whom CR's information has been of great value. A manufacturer of electric clocks shifted to another make of movement on learning from our BULLETIN report on his clock that its performance was poor. A large jobber in the hosiery trade, finding that our reports indicated that his suppliers were not adhering to high standards in production, proceeded to set up a hosiery laboratory of his own in order that he might better control the product which he was to buy and then resell to retailers.

In its early days, CR felt that many readers would be delighted to obtain at small cost the opportunity to study a detailed technical report which had cost CR several hundreds of dollars, and we thought that the technical people, especially, who like to read detailed presentations of findings would jump at the chance to obtain the complete technical report at a practically nominal charge. Yet in 1931, when we offered to supply to any interested subscriber, at a charge of \$5, a full copy of the engineering report on vacuum cleaners, which ran to about 20 pages of closely spaced technical data and conclusions, there were no orders. Similar offers have been made once or twice in subsequent years, but in each case, the demand for the complete study has been negligible.

The lack of response to our several offers to supply detailed technical data for the benefit of the experts led us to conclude that the BULLETIN should be written with the needs of the average intelligent consumer in mind, primarily, rather than the professional expert who wants a lot about volts, amperes, resolving power, lumens, and mechanical and electrical efficiency, for his \$3 to \$5 a year, but doesn't want the details badly enough to pay even a small fraction of what it cost CR to acquire the information in its own laboratory or from one of its many consultant experts. On the other hand, the detailed reports on refrigerators, vacuum cleaners, etc., that formed the basis for a report in CR BULLETIN could be made available in many cases in typescript form on a loan basis for something like \$10, if perchance there should be enough people who would be willing to pay that amount for an opportunity to study the technical experts' observations and findings.

In spite of the fact that the information in CR's BULLETIN includes a considerable amount of technical test data, there are a very few

who have complained that we should have presented our findings "in an engineering report" instead of as a lot of "over-simplified conclusions for John Q. Public who doesn't know an ampere from a volt, stress from strain, or polyethylene from celluloid." The people who are "bugs" on high-fidelity radio often write to CR in a way that indicates that there is no practicable amount of detail likely to be included in our articles which would be sufficient to satisfy their needs for information, on the subjects of pickup, tuners, amplifiers, loud-speakers, which interest them. On the other hand, the many who are devotees of the latest in automobiles or cameras feel that *their* hobby is the one that should be given all possible space, and that amplifiers and speakers should be regarded as a topic of the least possible importance, deserving a minimum in space and presentation.

Another proposal, which likewise shows a lack of appreciation of the average consumer's habits, is the suggestion frequently made that our service would be much more valuable if reports on various products were prepared in the form of separate sheets or groups of sheets to be inserted in a loose-leaf binder as fast as test results are published, in the manner of the Prentice Hall Federal Tax Guide and many other commercial services to businessmen. Our correspondent had apparently failed to note the price charged for the Federal Tax Guide is \$54-\$78 per year, or a very substantial amount over CR's \$3 to \$5 a year. Many do not realize that the loose-leaf method is not only a very costly method of publication and distribution, but is one which those who do not have a secretary or file clerk would find very inconvenient to keep in order. The idea of a loose-leaf encyclopedia, to be continually revised and kept up to date, was once expected to be very popular, but is little heard of nowadays.

It is not possible to provide a BULLETIN that will satisfy the wishes of some, without making others feel that they have missed something they consider important. Nevertheless our readers should keep in mind that the opposing points of view have been carefully considered, and that our articles are intended to be as simple in treatment as they can be and at the same time to reflect the correctness and precision of content necessary to satisfy an expert's interest in and eye for details. The judgment and approval of experts are important because of their technical and scientific qualifications that enable them to appraise the quality, care, and accuracy of CR's studies and reports for the benefit of the non-expert readers who constitute the great majority of our audience.

Household Incinerators

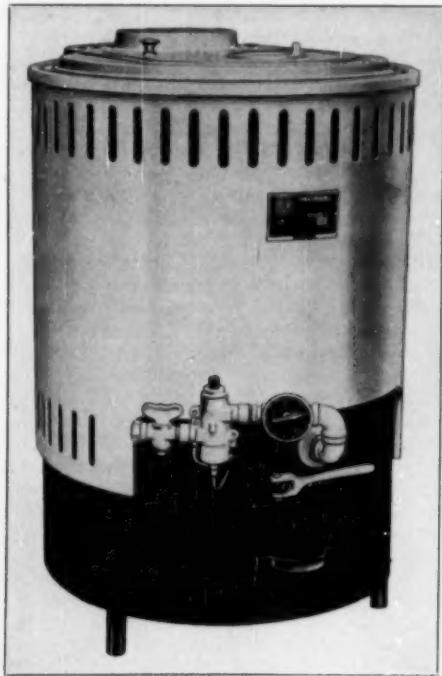
THREE are two kinds of garbage disposal units which have become popular in recent years. One is a grinder or shredder that is connected with the sink drain; the other is an "incinerator" or garbage burner, which is connected to a chimney or flue and which uses gas or electricity to dry out the garbage before it is burned. Both of these kinds have advantages over trash burners which use only waste paper or the paper with which the garbage is wrapped as fuel, and

which are not connected to the gas or electricity supply lines.

Where motor-driven mechanical sink garbage disposal units would not be practicable, incinerators may sometimes serve; for some homes they will provide an even more desirable method of disposing of garbage and refuse. The incinerator type of refuse disposal unit is designed to operate with a minimum of attention; it dries wet garbage by heat, and then ignites and burns it; the waste is finally reduced to a small amount of fine ashes, which ordinarily can be easily disposed of.

This subject is a somewhat unusual one in that it is difficult to arrive at any very positive opinions on the incineration method of garbage disposal. One engineer favorable to the use of incinerators has pointed out their undoubted advantage over garbage grinders, of not loading sewers and interfering with the bacterial balance in sewage disposal systems. On the other hand, an incinerator cannot be connected to just any chimney, and especially should not be connected to any chimney which has also connected to it an open draft-hood or vent-hood. Unless properly designed, the incinerator can cause serious air pollution from "fly ash" and will diffuse unpleasant odors to an extent that depends upon weather and wind conditions. In at least one large city, stringent regulations governing the installation of certain special incinerators used in apartment houses are being enforced, and incinerators in some cities are known to add greatly to the problem of pollution of the air of the community — already bad in many industrial areas.

Incinerators are now available in models of pleasing appearance that can be installed in the modern kitchen or basement. A consultant does not, however, recommend installation of an incinerator in a kitchen, unless a suitable flue is available; compliance with necessary regulations regarding safety of flue connections would be likely to cause a unit to stand out so far from the wall (if of a combustible type containing wood or wallboard) as to prevent its being installed in the most desirable or convenient location in the



Model S-25 Incinor (Gas)

kitchen. Use of an incinerator will obviate, except for the problem of disposal of tin cans, the necessity for dependence upon the uncertainties of municipal and other garbage collectors, and the fees paid to them. Residents in rural areas where there is no regular or inexpensive garbage collection service may find that these units would solve the problem of garbage and flammable trash disposal in a convenient manner. But CR believes that it would be well, before making a purchase, to check with neighbors or friends to see how satisfactory they have found similar units they are using, how well and conveniently they operate, and to what extent unpleasant odors have been present in the neighborhood under certain conditions of wind and weather. Consumers' Research would advise against the purchase of an incinerator unless this check with other users has actually been carried out. CR will be glad to hear from persons who own and use any of these units as to their degree of satisfaction with them, amount of installation costs or difficulties, repair and maintenance needed, etc.

The *Calcinator* and *Incinor* household incinerators are complete units ready for installation and connection to the chimney and source of fuel for operation. Operating cost for some of the units is considered high, and a prospective purchaser would do well to determine beforehand whether use of an incinerator will involve a higher operating expense than he would consider reasonable. (The information available indicates that people who buy garbage incinerators are mostly in high-income groups.) The capacity of the incinerator is another point to bear in mind in making a selection. *Calcinators* have a capacity of 1.6 bushels, and *Incinors* are available in 2-bushel and 4-bushel sizes. Such units should be able to burn a sizable amount of household trash as well as garbage.

On the *Calcinator* electric models, the instructions state that the device must not be disconnected from the electric service unless it is to be out of use for an extended period; then it must be thoroughly cleaned. If unplugged without cleaning, and left unused for a short period, such as a week end, unpleasant odors would be produced in the house by the putrefaction of the partially unconsumed garbage. A consultant interviewed several persons in a Middle West city who had installed *Calcinators* and found them uniformly satisfied with the performance of these units. Directions warned against over-rapid feeding of fast-burning material. While owners stated that no trouble had been encountered on this score, and that the units appeared sufficiently well insulated to prevent harm from



Model ES Calcinator (Electric)

the high heat, it is CR's opinion that the directions should be adhered to, and if for any reason they are not, then extra care and vigilance should be shown during the period when dry combustible material is being burned.

The deluxe *Calcinator* model appears to be well insulated, so as not to cause undue overheating of a kitchen. It is of the same height as a modern kitchen range and finished in white enamel to match other kitchen appliances. The standard model differs from the de luxe only in that it has a gray crackle finish. The gas-fired *Calcinator* is continuously on, burning gas 24 hours a day, and in earlier literature referring to a 1.3 bushels capacity model, is claimed to consume approximately 60 pounds of refuse during that period. An electric *Model ES* tested by CR used current for three periods each approximately $1\frac{1}{2}$ hours, consuming 2.7 kilowatt-hours per day (at 2 cents per kwhr., this would amount to about \$1.60 per month). This model easily handled the garbage from a household of four persons. In fact, it was found that there was a good margin of capacity, for operation only every other day was sufficient, which permitted reduction of the normal operating cost by one-half. Care must be taken not to include too much paper with each load; otherwise the flue pipes connecting the incinerator to the chimney become dangerously hot when the load ignites

and burns. For best results garbage must be wrapped in newspapers in fairly small packages. To keep the concentration of smoke and fumes exhausted from the chimney to a minimum, connection to a chimney with a good draft is essential.

The estimated operating cost for the gas models (based on the number of Btu's consumed by the incinerators as given in the A.G.A. Directory of Approved Gas Appliances and Listed Accessories) would be about \$3 monthly with manufactured gas at \$1.40 per thousand cubic feet, about 75 cents monthly with natural gas at 75 cents per thousand cubic feet, and \$6 monthly with bottled gas at 12 cents per pound (average rates).

The *Incinerator* is not insulated, which may not be a disadvantage if it is installed properly and in a fire-safe location and is to be used in a damp cellar, where a little heat the year round is desirable. In appearance, *Incinerator* is considered less attractive than the *Calcinator*. The *Incinerator* models are fired on an intermittent basis as required to consume and destroy the refuse placed in the unit. A timing device permits setting of the time during which gas is supplied to the burner up to four hours, after which it will be cut off automatically. According to the manufacturer's claims, the 2-bushel capacity *Model S-22* consumes approximately 1000 cubic feet of gas per month to dispose of all garbage and refuse for an average family of four people.

Both the *Incinerator* and *Calcinator* are available

in models that are fitted for use with natural, manufactured, mixed gases, or liquefied petroleum gases (bottled gas); *Calcinators* are also available for operation with electricity. The gas-fired models have been approved by the American Gas Association.

B. Intermediate

Calcinator Automatic Home Disposal Unit (Calcinator Div., Valley Welding & Boiler Co., Water St. at 27, Bay City, Mich.) Gas and electric models, \$114.50 to \$154.50, f.o.b. factory, plus 10% federal excise tax for electric models.

Incinerator Gas-Fired Incinerators (Bowser, Inc., Incinerator Div., Sycamore at 42 St., Cairo, Ill.) \$79.50 to \$353, f.o.b. factory.

* * *

For burning paper or wood, *trash burners* are available from Sears, Roebuck & Co. retail stores in some localities, priced at approximately \$3 to \$9, depending upon size. These are connected to chimney flues, as are the incinerators. Especially when fast burning material is being fed, they need to be used with real care, of course, to avoid risk of overheating and the possibility of setting fire to near-by flammable objects. Such burners are of thin sheet metal and of cheap construction and are not suitable for burning moist garbage. It is considered that they should not be used for burning of fast-flaming material such as excelsior and shredded paper packing material and other lightweight, large bulk combustible materials.

Rust Inhibitor for Oil-Burner Tanks

FUEL TANK FAILURES usually occur at the very bottom where any water accumulates that is present in the oil or that has entered the tank as moisture condensed from the air. Such failures are due to galvanic action which causes pitting, with a hole finally passing through the steel. *Sudbury Micro-Seal Tank Saver* is a product intended to be introduced into oil tanks to stop them from rusting and is thereby supposed to prolong the life of the tank and reduce danger of plugging of valves, nozzles, etc., with rust particles. The product is also alleged to prevent formation of sludge. It is priced at \$2 for a pint bottle, plus postage. The analysis indicated a strongly alkaline solution of approximately 35

percent sodium silicate and 65 percent water, and a blue dye.

The effectiveness of the product is assumed to lie in its alkaline properties as well as in the specific protective qualities of sodium silicate. Strongly alkaline solutions are effective in helping to reduce corrosion of iron by moisture. The sodium silicate which dissolves in the water that accumulates at the bottom of the tank makes the water alkaline, and thereby neutralizes any acid that may be present; it also forms a film over the metal which has been touched with water, tending to prevent further rusting.

The sodium silicate type of inhibitor, though not the best type for this application, has merit.

It is not effective where salt is present in the oil; such contamination is not uncommon (because of unavoidable contact of oil with salt water when shipments are made by tanker).

The manufacturer recommends that *Tank Saver* be added to the storage tank once a year or whenever the water is drained off. Though he recommends its use in automobile, truck, tractor, and plane engine tanks, CR would strongly advise against this as a water solution would be objectionable in engine fuel lines and might cause plugging or other damage to the carburetor.

A product of similar though not identical kind,

which uses the same advertising literature and an identical endorsement by the same firm of consulting engineers in Boston, is sold under the name of *Sudbury Micro-Seal Sav-A-Tank*.

The endorsing engineering firm made one mistake that it is hoped they will avoid in future reports to clients. *Their letter did not name the product about which their opinions were expressed*; on that account the manufacturer was in a position to use the testimonial in his advertising literature for two products of different brand names and somewhat different composition.

“Soil Conditioners”

New products being very actively promoted for home gardeners' use

THE PUBLIC has been excited — and rightly so — by the soaring claims in advertising of a new group of products referred to as “soil conditioners,” and sometimes as “miracle” soil conditioners. The advertising, which often extends to full pages in city newspapers, is more often than not vague as to what the product is or does, but in general the substances are supposed to act on the soil chemically to eliminate crusting, or surface hardness. Both liquid and powder forms are sold: the liquid form is to be sprinkled or sprayed on the surface; the powdered products are to be spaded in. This matter of spading in is played down in some advertising; in fact, the *impression* given by some shrewd writers of the advertising copy is that the products function more or less by themselves, and without back-breaking labor by the home gardener himself. The products are not fertilizers, and whatever the claims, they are wholly incapable of making good top soil of clay or sandy soils. The advertisements commonly make reference to unconditional guarantees and to the work of scientific laboratories.

Expert opinions differ, but as to at least one of the 40-odd products (*Krilium*, a grayish-white powder made with vinyl acetate and an extender or filler, applied at the rate of 1 pound per 100 square feet of soil and thoroughly worked in), there would appear to be no doubt that the synthetic chemical soil conditioner works. (All of the four products that have been found to be most effective in tests at Rutgers University are fine powders; those in liquid form were less effective.) The powders are applied to the soil

when it is dry on top, and then thoroughly mixed in by spading or cultivation.

The cost of the soil conditioners is as yet prohibitive for large-scale use, but the ones which are good (probably a few only) may have a useful place in backyard gardens, in lawns that are being newly established, and in greenhouses. The products as offered for sale are likely to have been diluted with inert material so that only 20 to 25% of the active soil conditioner is present.

Names of some of the products now offered are *Krilium*, *Loamium*, *Poly-Ack*, *Fluffium*, *AcriSoil*, *Agrilon*, *Aerotil*, *Soilife*, *TerraKem*, *Miracle-Gro*, *Hydro-Tite*, and *Du Pont Soil Conditioner W*.

It should be noted that the experts are not in full agreement. One university group considers that some of the products are meritorious; another doubts whether the new materials will be ready for practical use, or their properties fully enough known, for a long time. One agricultural experiment station, for example, reported tentatively that while soil structure was improved by one of the conditioners, *Krilium*, stem rot of geraniums developed that it was thought would not have occurred without use of the material.

Another university expressed itself very cautiously on the subject, indicating that it had field studies under way, but that its experts were not yet in a position to state what were the true effects of the soil-conditioner materials; neither were they able to support any of the advertising claims relative to the direct effect of soil conditioners on seed germination, plant growth, and yield.

We advise that, if claims are made of approval

by professional experts or laboratories, the consumer planning to use any considerable amount of the material should not buy unless the *professional authority is specifically named*, and his reports made available for study if wanted; for there is good reason to believe that some of those pushing the products are operating blatant promotion schemes which may end disastrously as to a good many, perhaps most, of the brands offered. Consumers should not buy any brand before reading the label closely to see whether the label claims include a guaranty of effective performance and whether the claims correspond to claims that were stated or implied in the advertising. The problem of misrepresentation of benefits is now in such a situation that one chemical trade journal expressed the opinion that

if the situation is not cleaned up by this fall or by next year, the very words "soil conditioner" will be anathema to the public, and a promising market for a new chemical product permanently ruined.

We conclude this brief preliminary note with the judgment that some of the gray-white powder substances are likely to be effective soil conditioners; others may not be or may very possibly verge on the fraudulent; there is even a possibility that some may do harm to the soil. For the person who has anything but a small or experimental garden or grass plot, the question of cost will surely be a deciding factor, for none of the products at the present time can be regarded as proven in, from an economic standpoint.

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		<i>Indicates that listings of names or brands are included.</i>

Ratings of Motion Pictures

THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines — some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Box Office, Cine, Daily News (N.Y.), The Exhibitor, Horizon's Reports, Joint Estimates of Current Motion Pictures, Motion Picture Herald, National Legion of Decency List, Newsweek, New York Herald Tribune, New York Times, New York World-Telegram & Sun, Parents' Magazine, Release of the D.A.R. Preview Committee, Reviews and Ratings by the Protestant Motion Picture Council, Time, Times Herald (Washington, D.C.), Variety (weekly), Weekly Guide to Selected Motion Pictures (National Board of Review of Motion Pictures, Inc.).

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), or C (not recommended) on its entertainment values.

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

ad—adventure	mel—melodrama
biog—biography	mus—musical
c—in color (Technicolor, Cinecolor, Trucolor, Magnacolor, Vitacolor, etc.)	mys—mystery
car—cartoon	rom—dramatization of a novel
com—comedy	rom—romance
crv—crime and capture of criminals	sci—science fiction
doc—documentary	so—social problem drama
dr—drama	trav—travel
fan—fantasy	war—dealing with the lives of people in wartime
his—founded on historical incident	wes—western

A B C

A	B	C	
—	6	8	Aaron Slick from Punkin Crick..... mus-com-c A
—	8	7	About Face..... mus-com-c A
—	3	10	Actors and Sin..... dr A
—	2	4	African Treasure..... mel AYC
—	5	6	Aladdin and His Lamp..... fan-c AYC
—	2	9	Another Man's Poison..... mys-mel A
—	4	4	Anthony of Padua (Italian)..... bio AYC
1	12	3	Anything Can Happen..... com AYC
—	3	3	Apache Country..... wes AYC
—	2	1	As You Were..... moy-com AYC
—	7	3	Assassin for Hire..... cri-mel A
—	7	6	At Sword's Point..... mel-c A
—	12	2	Atomic City, The..... cri-mel AYC
—	1	6	Bad Lord Byron, The (British)..... dr A
—	4	4	Bal Tabarin..... mus-mel A
—	8	4	Battle at Apache Pass, The..... wes-c AYC
—	—	4	Behind Closed Shutters (Italian)..... dr A
—	6	9	Belle of New York, The..... mus-com-c AYC
—	13	1	Belles on Their Toes..... dr-c AYC
4	10	3	Bend of the River..... wes-c AYC
—	5	9	Big Trees, The..... mel-c A
1	2	1	Birthright..... doc-dr A
—	2	2	Black Hills Ambush..... wes AYC
—	3	3	Black Lash, The..... wes AYC
—	3	7	Bonnie Prince Charlie (British)..... hist-dr-c A
—	15	1	Boots Malone..... mel A
—	2	2	Border Saddlemates..... wes AYC
—	3	6	Brave Warrior..... hist-dr-c AY
—	—	3	Brief Rapture (Italian)..... cri-mel A
—	8	—	Brigand, The..... adv-c A
—	13	3	Bronco Buster..... mel-c AYC
—	—	7	Bugles in the Afternoon..... mys-mel A
—	6	3	Cage of Gold (British)..... hist-c AYC
—	14	2	California Conquest..... cri-mel A
—	8	7	Captive City, The..... bio A
1	1	7	Carbine Williams..... dr A
—	6	3	Carson City..... wes-mel-c AYC
—	4	10	Clash by Night..... dr A
—	1	6	Colorado Sundown..... mus-wes AYC
—	1	9	Confidence Girl..... cri-mel A
3	6	4	Cry, the Beloved Country..... nov A
—	—	8	Daughter of the Sands (French)..... fan A
1	11	4	Deadline — U.S.A..... mel A
6	9	3	Death of a Salesman..... dr A
—	1	6	Denver & Rio Grande, The..... mel-c AYC
1	7	2	Desert Passage..... wes A
—	3	3	Diplomatic Courier..... mys-mel A
5	9	3	Edward and Caroline (French)..... com A
—	2	5	Encore..... dr A
—	11	2	Fabulous Senorita, The..... com A
—	—	4	Faithful City, The..... dr AYC
—	—	4	Fall of the House of Usher, The (British)..... dr A
—	5	10	Fighter, The..... mel A
—	6	3	First Time, The..... com A
2	14	—	Five Fingers..... war-mel A
—	9	5	Flesh and Fury..... mel A
—	6	8	For Men Only..... propaganda-dr A
—	3	3	Franchise Affair, The (British)..... mys-dr A
—	3	2	Francis Goes to West Point..... com AYC
—	—	4	Geisha Girl..... mel A
—	4	11	Girl in Every Port, A..... com A
1	10	6	Girl in White, The..... bio AYC
—	1	7	Glory Alley..... dr A
—	3	3	Gobs and Gals..... mus-com A
—	9	7	Green Glove, The..... cri-mel A
—	4	4	Half-Breed, The..... mus-wes-c A
—	2	2	Harem Girl..... com A
1	5	—	Has Anybody Seen My Gal?..... mus-com-c AYC
—	2	4	Here Come the Marines..... com A
—	9	1	Here Come the Nelsons..... com AYC
—	—	3	Hideout, The (British)..... cri-mel A
—	5	1	High Noon..... wes A
2	9	1	High Treason (British)..... mys-mel AYC
—	—	4	Hold That Line..... com AYC
—	10	4	Hoodlum Empire..... cri-mel AYC
—	3	4	I Dream of Jeannie..... mus-bio-g AYC
—	5	1	If Moscow Strikes..... war-doc AYC
—	—	2	In the Circus Arena (USSR)..... doc-c AYC
—	7	1	Indian Uprising..... war-mel-c AYC
—	9	6	Invitation..... dr A
3	1	—	Ivanhoe..... nov AYC
2	4	1	Ivory Hunter (British)..... dr-c AYC
—	7	7	Jack and the Beanstalk..... com-c YC
—	6	8	Japanese War Bride..... dr A
—	1	4	Jet Job..... mel AYC
—	7	—	Jour de Fete (French)..... com AYC
1	3	1	Jumping Jacks..... war-mus-com AYC
—	2	8	Jungle Jim in the Forbidden Land..... ade-c AY
—	3	4	Just Across the Street..... com A
—	8	5	Just This Once..... com A

A	B	C		A	B	C	
—	5	6	Kangaroo.....	—	10	3	Return of the Texan.....
—	4	1	Kansas Territory.....	—	—	3	dr AYC
—	2	4	Kid Monk Baroni.....	—	6	1	dr AYC
—	—	4	Kisenga, Man of Africa (British).dr-c A	—	4	11	3
—	5	4	Lady in the Iron Mask.....	—	4	5	dr A
—	3	1	Lady with a Lamp, The (British).biog AYC	—	3	8	wes-c A
—	2	4	Laramie Mountains.....	—	—	9	doc-c AYC
—	6	10	Las Vegas Story, The.....	—	1	2	mel A
—	5	2	Last Musketeer, The.....	—	1	8	dr-c A
—	4	1	Latuko.....	—	—	10	adv-c A
—	1	4	Leadville Gunslinger.....	—	5	5	mel-c A
—	—	3	Life of Donizetti, The (Italian).mus-biog A	—	—	2	dr A
—	12	3	Lion and the Horse, The.....	—	5	—	mus-com A
—	1	6	Loan Shark.....	—	5	12	1
—	13	3	Lone Star.....	—	1	8	dr AYC
—	3	13	Love is Better Than Ever.....	—	—	6	mys-com-c AYC
—	4	5	Lovely to Look At.....	—	1	4	9
—	3	3	Loyola — The Soldier Saint (Spanish).biog AYC	—	—	9	dr A
—	10	3	Lydia Bailey.....	—	—	8	cri-dr A
—	5	4	Ma and Pa Kettle at the Fair.....	—	—	1	soc-dr A
—	4	13	Macao.....	—	1	2	sound-off AYC
1	8	1	Magic Garden, The (So. African).fan AYC	—	5	1	Spider and the Fly, The (British).mys-mel AY
—	1	4	Malia (Italian).dr A	—	—	3	St. Matthew Passion (Austrian).mus-doc AYC
—	2	2	Man Bait.....	—	—	2	Stage to Blue River.....
—	1	2	Man from the Black Hills, The.wes AYC	—	2	2	wes AYC
3	15	—	Man in the White Suit, The (British).com AYC	—	5	7	Steel Fist, The.mys-mel A
—	—	4	Maniacs on Wheels (British).mel A	—	—	1	Steel Town.mel-c A
—	2	13	Mari Maru.....	—	—	5	Stolen Face.dr A
—	1	3	Marry Me (British).com A	—	—	7	Storm Over Tibet.adv A
1	13	3	Marrying Kind, The.....	—	—	4	Stormbound.mel A
—	1	7	Maytime in Mayfair (British).com-c A	—	2	6	Story of Robin Hood, The.adv-c AYC
—	7	10	Meet Danny Wilson.....	—	—	2	Strange World.mel A
—	3	6	Miserables, Les (Italian).dr A	—	—	4	Stronghold.hist-mel AYC
—	1	2	Miss Italy (Italian).dr A	—	—	3	Tale of Five Women, A.dr A
—	6	3	Miss Julie (Swedish).dr A	—	—	5	Tales of Robin Hood.adv AYC
—	1	6	Models, Inc.....	—	1	2	Talk About a Stranger.dr A
—	2	4	Montana Territory.....	—	—	3	Target.wes AYC
—	2	5	Mr. Lord Says No! (British).com A	—	—	7	Tarzan's Savage Fury.adv AYC
3	4	5	Murder in the Cathedral (British).dr A	—	—	1	Texas City.wes AYC
—	5	10	Mutiny.....	—	—	5	Thief of Damascus.adv-c A
2	12	2	My Six Convicts.....	—	—	6	This Woman is Dangerous.cri-mel A
2	6	8	My Son, John.....	—	—	3	Three for Bedroom C.com-c A
—	12	2	Narrow Margin, The.....	—	14	14	Thrill That Kills, The (Italian).dr A
1	13	3	Navajo.....	—	—	3	Tomorrow is Too Late (Italian).dr A
1	10	—	Never Take No for an Answer (Italian).dr AYC	—	1	8	Trail Guide.wes AYC
—	1	3	New China, The (USSR).trav-c A	—	—	5	Treasure of Lost Canyon, The.mel-c AYC
—	4	4	New Israel, The (Israeli).dos AYC	—	—	6	Under the Paris Sky (French).dr A
—	2	1	Night Raiders.....	—	—	2	Valley of the Eagles.mys-mel A
—	1	4	Night Stage to Galveston.....	—	10	5	Viva Zapata!.hist-dr A
—	4	5	No Resting Place (British).dr A	—	2	2	Voice in Your Heart, A (Italian).mus-dr A
—	3	6	No Room for the Groom.....	—	—	4	Volcano (Italian).dr A
—	1	11	Okinawa.....	—	—	4	Waco.wes-c AYC
—	4	5	Oklahoma Annie.....	—	—	2	Wagons West.wes-c AYC
—	1	8	One Big Affair.....	—	1	4	Wait Till the Sun Shines, Nelly.dr-c A
11	4	4	Outcast of the Islands.....	—	—	11	Walk East on Beacon.mys-mel AYC
6	7	7	Outcasts of Poker Flat, The.....	—	1	2	Wall of Death (British).mel A
2	7	2	Outlaw Women.....	—	—	5	Water Birds.doc-c AYC
—	3	4	Pace that Thrills, The.....	—	—	10	Waterfront Women (British).dr A
—	3	3	Paris Nights (French).mus-com A	—	—	4	When in Rome.dr AYC
—	6	1	Passion for Life (French).propaganda-dr A	—	3	Whispering Smith vs. Scotland.Yard.mel A	
2	8	3	Pat and Mike.....	—	—	8	Wild Heart, The.dr-c A
—	8	4	Paula.....	—	1	4	Wild Horse Ambush.wes AYC
—	2	5	Perfectionist, The (French).dr A	—	—	7	Wild North, The.mel-c A
2	11	6	Phone Call from a Stranger.....	—	11	7	Wild Stallion.wes-c AYC
2	3	3	Pictura — An Adventure in Art.doc A	—	—	4	Winning Team, The.biog AYC
1	14	—	Pride of St. Louis, The.com AYC	—	1	6	With a Song in My Heart.mus-dr A
—	5	2	Prize, The (French).com A	—	4	9	Without Warning.cri-mel A
2	3	—	Quiet Man, The.dr-c AYC	—	—	5	Woman in Question, The.cri-mel A
—	10	8	Rancho Notorious.....	—	10	4	Woman in the Dark.cri-mel A
—	9	6	Red Ball Express.....	—	—	6	World in His Arms, The.mel-c AYC
—	9	9	Red Planet Mars.....	—	—	7	Yank in Indo-China, A.war-mel AYC
1	10	1	Red Skies of Montana.....	—	6	2	You Can't Beat the Irish.com A
—	4	4	Red Snow.....	—	—	3	Young and the Damned, The (Mexican).dr A
—	13	4	Retreat, Hell!.....	—	6	6	Young Man with Ideas.com A

The Consumers' Observation Post

(Continued from page 4)

SOMETHING NEW IN PLUMBING SERVICES has been offered by the Zein Plumbing Co., Milwaukee. For an annual premium of \$14 a year, the Zein plumbing insurance policy will guarantee 12 types of plumbing repair and maintenance jobs, reports Advertising Age. The firm is said to have 2000 policies in force. The gimmick, however, as pointed out by the advertising journal, is that the Zein Co. is in an excellent position to suggest the purchase of a new sink, a new refrigerator, or a new washing machine. It was not indicated whether the outfit sells these appliances.

OBESITY is a form of malnutrition, according to the Nutrition Foundation, which points out that it is one disease that can be invariably cured by rigidly following a therapeutic regimen. Overweight has been defined as any deviation of 10 percent or more above a person's ideal weight. It is estimated that at least one-fifth of the population of the United States is overweight.

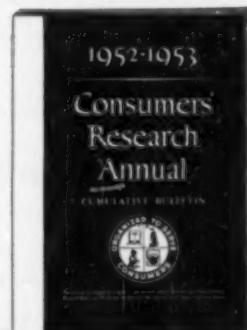
PREVENTING MILDEW in closets and storage rooms was studied under actual living conditions in homes in Gainesville, Florida, during the summer season. The several methods tried included the use of fungistatic vapors of paradichlorobenzene and orthodichlorobenzene, dehumidifying agents such as calcium chloride, and electric heating with electric light bulbs and resistance wire heaters. The conclusion drawn from the experiments, reported by Professor S. S. Block, of the University of Florida, was that the use of heat was the only method that proved satisfactory. A small electric light kept burning continuously may help if the space is not too large. The light should be carefully and positively guarded from coming into con-

Money-saving information on your important purchases!

- Where? Why, in Consumers' Research Bulletin, of course! An important aspect of saving money is spending it wisely. How do you decide what television set, high-fidelity radio-phonograph assembly, automatic clothes dryer, washing machine, or automobile to buy? Perhaps you survey the models available in your locality, talk with friends about their experiences, and listen to salesmen of competing products. Such a checkup is useful, but you also need the engineering appraisals and scientific tests made by Consumers' Research on a number of brands, comparing them point by point and rating them as A. Recommended, B. Intermediate, or C. Not Recommended, on the basis of comparative tests.
- Each month, Consumers' Research presents the results of its latest tests on a variety of the many products consumers buy and use, from automatic toasters to automobiles. Once a year, the greater part of these findings are summed up in the Annual Cumulative Bulletin and supplemented with much new and important information in a number of fields. The price is nominal and many subscribers report that they have saved much more than the cost of a subscription on a single important purchase. You will find subscription rates and a convenient order blank on the next page. If you are already a subscriber, perhaps some friend will be glad to know about our work.

Coming in September!

Often called the consumer's "handbook of buying," this big 220-page Annual is a handy guide to aid the consumer in getting the most for his money. Ratings of products by brand name are conveniently grouped into sections, including Television and High-Fidelity Radio, Household Appliances, Cameras, Textiles and Clothing, Automobiles, Heating Equipment, and Home Maintenance. The volume is indexed for ready reference.



tact with clothing, paper, wood, or other flammable material at any time; it should be well separated from the clothing and not placed where a garment slipping from a hanger or hook could fall on it.

THE ADDITION OF ANTIBIOTICS TO ANIMAL RATIONS is attracting increasing interest among livestock feeders to produce more rapid growth. Some concern over the practice has been expressed by the Journal of the American Medical Association with regard to the potential hazards to health of the human beings who eat the meat from animals fed on antibiotic supplements. The editor cites one study indicating that feeding of rations treated with streptomycin to turkey poult caused the rapid development of drug-resistant strains of coliform bacteria or *Salmonella*, and pointed out that this disease originating in poultry is known to be dangerous to human beings. Still another potential danger from prolonged feeding of antibiotics to poultry is the relative increase of yeast-like organisms in the birds' intestinal flora, which may be communicated to the human beings who consume their flesh. The editor also cites earlier studies that stress the need for further investigation of the results of long-continued use of antibiotic supplements before they can be cleared of any possible suspicion of involving potential hazards to the public health.

NEW OR NEWLY TESTED:

NUL Anti-static Rinse (Electro-Chemical Products Corp., 60 Franklin St., East Orange, N.J.), 4 fl. oz., 59c (claimed to be enough for 30 rinses). Product is designed to eliminate static electricity in synthetic fabrics that causes garments to cling to each other and hug the body, and to end the skin-prickling sensation caused by electro-static charges built up in such garments when they are worn. Nul is simply applied by being added in the amount of one teaspoonful to each quart of final rinse water. In use tests made by CR on Dacron shirts, the rinse was found to be fairly effective as an anti-static agent. In the course of the test, however, repeated use of Nul imparted a noticeable odor to the shirts to which it was applied. To some this odor was not unpleasant; others found it objectionable. At its present stage of development, the product might be considered somewhat expensive for the service it affords.

Consumers' Research, Inc.

Washington, N. J.

Please enter my order as checked. It is understood that my handling of any CR material which is marked "The analyses of commodities, products, or merchandise appearing in this issue of the Consumers' Research Bulletin are for the sole information of Consumers' Research subscribers" will be in accordance with that direction.

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BUSINESS OR PROFESSION

GR-37

Please check your preference:

I enclose \$5.00 (Canada & foreign, \$5.50) for one year's subscription to Consumers' Research Bulletin monthly (12 issues) AND the forthcoming 1952-53 Annual Cumulative Bulletin when it is ready in September 1952.

New

I enclose \$3 (Canada & foreign, \$3.50) for one year's subscription to Consumers' Research Bulletin monthly (12 issues).

New

I enclose \$3.25 (Canada & foreign, \$3.50) for a subscription to the forthcoming 1952-53 Annual Cumulative Bulletin alone when it is ready in September 1952.

I enclose \$2.00 (Canada & foreign, \$2.25) for a copy of the forthcoming 1952-53 Annual Cumulative Bulletin when it is ready in September 1952. Since I am a subscriber to Consumers' Research Bulletin (12 issues), I am entitled to the special rate.

Phonograph Records

BY WALTER F. GRUENINGER

Please Note: Is the ratings AA indicates highly recommended; A, recommended; B, intermediate; C not recommended. Although nearly all new releases of serious music are heard, space narrows comment, generally, to items which merit high ratings.

Beethoven: *Romances Nos. 1 and 2.* Joseph Fuchs (violin) with the Little Orchestra Society under Scherman. Decca DL 4004. \$2.50. Clean, musically performance of charming pieces which foreshadowed the violin concerto. Excellent recording. . . . One of ten disks in the welcome new Decca 4000 series which consists of 10 inch LP's offering approximately 8 minutes of music on each side — enough for short classical selections. Five additional disks in this series listed at end of this column are also highly recommended.

Interpretation AA
Fidelity of Recording AA

Borodin: *Symphony No. 2 & Stravinsky: Firebird Suite.* Minneapolis Symphony Orchestra under Dorati. Mercury MG 50004. \$5.95. The Borodin is a lame work but the Stravinsky ballet suite levels values on this recording. The playing of both reaches high standards and the recording is satisfactory, though the Mercury engineers have not matched their success with the Chicago Symphony.

Interpretation AA
Fidelity of Recording AA

Haydn: *Symphonies Nos. 94 ("Surprise") and 101 ("Clock").* Berlin Philharmonic Orchestra under Lehmann and RIAS Symphony Orchestra under Fricay. Decca DL 9617. \$5.85. Two of Haydn's most frequently played symphonies performed with appropriate verve and good orchestral discipline. Satisfactory recording.

Interpretation AA
Fidelity of Recording AA

Kodaly: *Harry Janos Suite.* Austrian Symphony Orchestra under Halauz. Remington RLP 149-44. \$1.69. Well played is this orchestral suite drawn from an amusing Hungarian opera. Acceptable recording. Surface noise more evident than most LP's, but not really objectionable. A lot for \$1.69.

Interpretation AA
Fidelity of Recording A

Lalo: *Concerto in F Major & Schubert: Rondo in A Major.* Miriam Solovieff (violin) with the Vienna State Opera Orchestra under Swoboda. Concert Hall Society CHS 1143. \$5.95. Interesting, though not top drawer, works which are rarely heard. Miss Solovieff's playing of the concerto emerges a bit pale, lacking in requisite bravura and bite. Recording requires attenuation of the highs for best balance.

Interpretation A
Fidelity of Recording A

Lecocq: *La Fille de Madame Angot.* Dachary, Michel, Legouhy, etc., under Gressier. Vox PL 20000. \$5.95. An abridged performance of a typical opera bouffe — gay, delightful tunes. Topflight performance and recording.

Interpretation AA
Fidelity of Recording AA

A Boston Pops Program. Boston Pops Orchestra under Fiedler. RCA Victor LM 164. \$4.67. "Capriccio Espagnol," "Marche Slave," "Fingal's Cave Overture" played with zest and imagination. Recording slightly over-reverberant and not as full and round as the best.

Interpretation AA
Fidelity of Recording A

Maria Cebotari Memorial Record (soprano). Urania LP 7036. \$5.95. This sterling artist died in 1949 at the age of 39. The selections offered were taken from radio broadcasts a few years before her death. Included are the "Salome" Final Scene, "Martern Aller Artern" "Madama Butterfly" duet, etc.

Interpretation AA
Fidelity of Recording A

Concert Souvenirs. Louis Kaufman (violin). Capitol L 8165. \$3.98. "Humoresque," "Souvenir," "Ave Maria," "Traumerei," etc. Kaufman plays so straightforwardly he underplays. His rich tone lacks variety, which results in a certain monotony. But his playing is incisive. Good recording.

Interpretation A
Fidelity of Recording AA

OTHER LP'S HIGHLY RECOMMENDED (for interpretation and for fidelity)

BACH GUILD — Bach: *Contata No. 201.* Choir and Orchestra of the Bach Guild under Koch. BG 514.

COLUMBIA — Krenek: *Symphonic Elegy for String Orchestra.* Philharmonic-Symphony Orchestra of New York under Mitropoulos & Schoenberg: *Erwartung.* Dorothy Dow (soprano) with the same orchestra. ML 4524.

Schubert: *Symphony No. 8 & Mozart: Symphony No. 31.* Royal Philharmonic Orchestra under Beecham. ML 4474.

Music of the Liturgy in English. Students of the General Theological Seminary under Brown and Mixed Choir under Gilbert. ML 4528.

DECCA — Copland: *Children's Suite* from "The Red Pony" & *Thomson: Acadian Song and Dances from "Louisiana Story."* Little Orchestra Society under Scherman. DL 9616.

Mendelssohn: *A Midsummer Night's Dream Overture.* Berlin Philharmonic under Fricay & *Weber: Oberon Overture.* Berlin Philharmonic under Jochum. DL 4006.

Puccini Arias Played by Camarata and His Orchestra DL 4007.

Rossini: *Overtures to Semiramide and the Italian Woman in Algiers.* Berlin Philharmonic under Fricay. DL 4010.

Strauss: *Blue Danube Waltz* and *Wiener Blut Waltz.* Berlin Philharmonic under Fricay. DL 4009. *Operatic Arias Played by Camarata and His Orchestra.* DL 4008.

HAYDN SOCIETY — Haydn: *Missa Sancti Bernardi De Offida.* Danish Royal Opera Orchestra and the Copenhagen Boys' and Men's Choir under Woldike. HSL 2048.

RCA VICTOR — Ravel: *Quartet in F.* Paganini Quartet. LM 146. *Sousa Marches.* Cities Service Band under Lavalle. LPM 3014.

Two Grand. Whittemore and Lowe (duo-piano). LM 154.

VOX — Messenger: *Monsieur Beaucaire* (abridged). Soloists, etc., under Gressier. PL 20300.

Planquette: *Les Cloches de Corneille* (abridged). Soloists, etc., under Gressier. PL 20100.

52.70